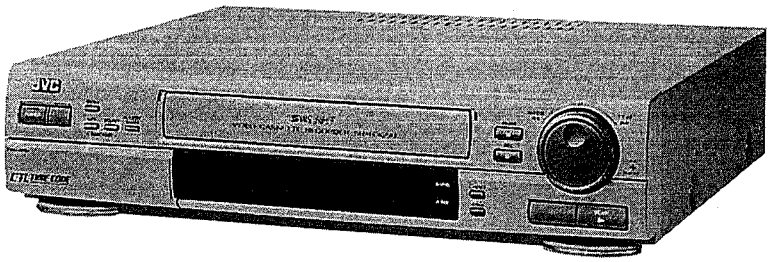
JVC

SERVICE MANUAL

VIDEO CASSETTE RECORDER

SR-S365U(A)



S-VHS Hi-Fi

This service manual describes only the matters that are different from the SR-S365U.
On servicing, refer to the service manual (No. 9330) for the SR-S365U together with this.

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No. 9356
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SR-S365U has been changed to SR-S365U(A) since the serial No. xx3x7659 and after. The mechanism assembly has been changed to an aluminum die-cast and the main board assembly has been changed as well.

To distinguish the new model from the conventional models, a label printed (A) is attached after the model No. of the rating label (Serial No. label) and the front panel.

This service manual only explains the changed sections, therefore, to carry out the services for the (A) version, please refer to the manual for the SR-S365U (No. 9330) as well.

TABLE OF CONTENTS

Section	Title	Page
Important Safety Precautions		
SECTION 1	**SERVICE CAUTION**	
1.1	DIFFERENCE BETWEEN SR-S365U AND SR-S365U(A)	1-1
SECTION 2	**MECHANISM REPAIR/ADJUSTMENT PROCEDURES**	
2.1	BEFORE MAKING REPAIR/ADJUSTMENT	2-1
2.1.1	Precautions	2-1
2.1.2	How to unload the cassette tape manually	2-1
2.1.3	Special implements and Tools Required for Adjustment	2-1
2.1.4	Specifications of alignment tape	2-1
2.2	MAINTENANCE AND CHECK	2-2
2.2.1	Location of main mechanical parts	2-2
2.2.2	Maintenance of main parts and periodical reference	2-3
2.2.3	Cleaning	2-4
2.2.4	Lubrication	2-4
2.3	REPLACEMENT OF MAIN PARTS	2-4
2.3.1	Before removing	2-4
2.3.2	How to set to the mechanism assembly position	2-4
2.3.3	Stator Assembly	2-4
2.3.4	Rotor Assembly	2-5
2.3.5	Upper drum assembly	2-5
2.3.6	Head cleaner	2-6
2.3.7	Pinch roller arm assembly	2-6
2.3.8	Tension band assembly	2-7
2.3.9	Capstan motor, Capstan brake arm assembly	2-7
2.3.10	Drum assembly	2-7
2.3.11	Clutch unit (S), (T), Control plate, Reel disk (S), (T)	2-8
2.3.12	Full-erase head	2-10
2.3.13	A/C head assembly	2-10
2.3.14	Belt (Loading)	2-10
2.3.15	Belt (Capstan, Housing)	2-11
2.3.16	Idler assembly	2-11
2.3.17	Sub brake assembly (T)	2-11
2.3.18	Sub brake assembly (S)	2-11
2.3.19	Pole base assembly(S), (T)	2-12
2.3.20	Guide flange(S), (T)	2-12
2.3.21	Guide arm assembly	2-13
2.3.22	Loading motor, Motor pulley	2-13
2.3.23	Rotary encoder, Control cam	2-13
2.3.24	Slide plate, Main brake assembly(S), (T)	2-14
2.3.25	Slit disk(S), (T)	2-15
2.3.26	Guide rail, Loading arm assembly	2-15
2.3.27	Pulley assembly	2-16
2.3.28	Worm gear assembly	2-17
2.4	HOW TO MOUNT THE MAIN PARTS (Mechanism Phase Adjustment)	2-17
2.4.1	Before parts assembling	2-17
2.4.2	Loading arm assembly (S), (T)	2-17
2.4.3	Rotary encoder, Change lever, Control cam	2-18
2.4.4	Slide plate	2-18
2.4.5	Control plate	2-18
2.5	INTERCHANGEABILITY ADJUSTMENT	2-19
2.5.1	FM waveform linearity check/adjustment	2-19
2.5.2	A/C head assembly height, Azimuth check/adjustment	2-20
2.5.3	A/C (Audio Control) head phase (X value) check/ adjustment	2-21
2.5.4	EP auto tracking check	2-21
2.5.5	Tension arm position check/adjustment	2-22
2.5.6	Take-up torque check	2-22
2.5.7	Tape transport system check/adjustment	2-22
SECTION 3	**ELECTRICAL ADJUSTMENT**	
3.1	PRECAUTION	3-1
3.1.1	Required test equipment	3-1
3.1.2	Required adjustment tools	3-1
3.1.3	About board adress	3-1
3.1.4	Signals required for video system adjustment	3-1
3.2	SWITCHING REGULATOR CIRCUIT	3-2
3.2.1	5V DC output voltage	3-2
3.3	SERVO CIRCUIT	3-2
3.3.1	PB switching point	3-2
3.3.2	Slow tracking preset	3-2
3.4	VIDEO CIRCUIT	3-3
3.4.1	AGC Y level	3-3
3.4.2	White/dark clip (S-VHS/VHS)	3-3
3.4.3	Sub emphasis input level	3-4
3.4.4	Carrier/deviation (S-VHS/VHS)	3-4
3.4.5	PB Y level (S-VHS/VHS)	3-4
3.4.6	SP/EP REC color level	3-5
3.4.7	S-VHS VIDEO EQ	3-5
3.4.8	AFC CLOCK	3-6
3.5	PRE/REC CIRCUIT	3-6
3.5.1	REC FM level	3-6
3.6	AUDIO CIRCUIT	3-6
3.6.1	Audio REC FM level	3-6
3.6.2	Audio EE level	3-6
3.7	Y/C SEP CIRCUIT	3-6
3.7.1	Digital I/O level	3-6
SECTION 4	**CHARTS AND DIAGRAM**	
4.1	OVERALL WRING DIAGRAM	4-1
4.2	MAIN (SYSCON) CIRCUIT BOARD SCHEMATIC DIAGRAM	4-2
4.3	MAIN (SERVO) CIRCUIT BOARD SCHEMATIC DIAGRAM	4-3
4.4	MAIN (VIDEO) CIRCUIT BOARD SCHEMATIC DIAGRAM	4-4
4.5	MAIN (AUDIO) CIRCUIT BOARD SCHEMATIC DIAGRAM	4-5
4.6	MAIN CIRCUIT BOARD	4-6
4.7	FG AMP CIRCUIT BOARD SCHEMATIC DIAGRAM	4-8
4.8	FG AMP CIRCUIT BOARD	4-8
4.9	IC BLOCK DIAGRAMS	4-8
SECTION 5	**EXPLODED VIEWS AND PARTS LIST**	
5.1	CABINET AND CHASSIS ASSEMBLY M2	5-1
5.2	CABINET AND CHASSIS ASSEMBLY PARTS LIST M2	5-2
5.3	MECHANISM ASSEMBLY M4	5-3
5.4	MECHANISM ASSEMBLY PARTS LISTT M4	5-3
SECTION 6	**ELECTRICAL PARTS LIST**	
6.1	MAIN BOARD ASSEMBLY PARTS LIST 03	6-2
6.2	FG AMP BOARD ASSEMBLY PARTS LIST 56	6-7

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▒) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

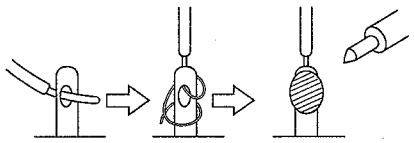


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

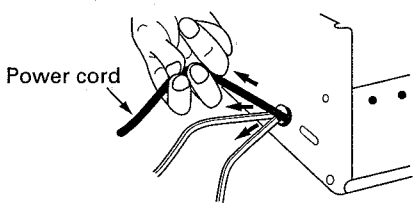


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

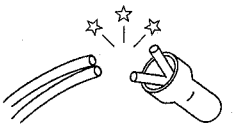


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

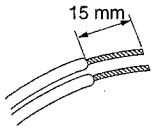


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

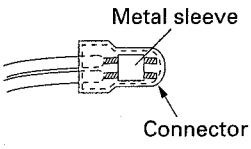


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

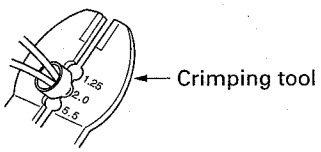


Fig.6

(5) Check the four points noted in Fig.7.

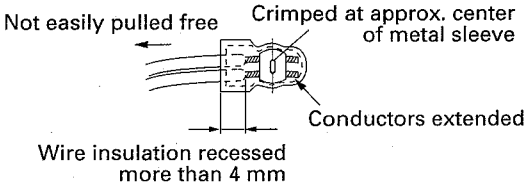

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

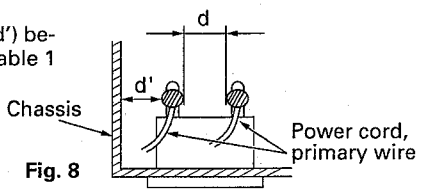


Fig. 8

4. **Leakage current test**
Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
Measuring Method : (Power ON)
Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

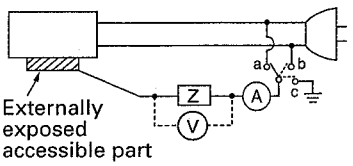


Fig. 9

5. **Grounding (Class Ⅰ model only)**
Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
Measuring Method:
Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

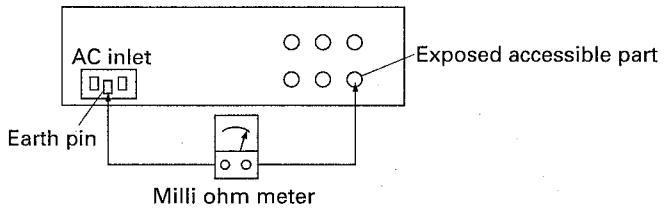


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	–	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

SECTION 1
SERVICE CAUTION

1.1 DIFFERENCE BETWEEN SR-S365U AND SR-S365U(A).

This table shows differences only.

Item	SR-S365U	SR-S365U(A)	Remrks
Subsection 7.1 Packing M1			
Packing label	No (A) mark	With (A) mark	—
Subsection 5.1 Cabinet and chassis assembly M2			
⑧SCREW	SDST2608Z	SDSP2606Z	Fixxing the drum assembly
㉔TERMINAL BOARD	PRD19003	PRD19003-01-02	Design has been changed
⑥SCREW	No	SDSF3008Z	Fixxing the FG AMP board
⑪RATING LABEL	No (A) mark	With (A) mark	—
㉞LABEL	No	PGD40197	Ⓐlabel of Front panel
⑲CASSETTE HOUSING ASSEMBLY	PUS29724A-5	PGS30402A	No interchangeability
⑫SCREW	SDST2612Z	—	Fixxing the cassette housing
⑧SCREW	—	SDSP2606Z	Fixxing the cassette housing at left
⑯SCREW	—	SDST2610Z	Fixxing the cassette housing at right
Subsection 5.2 Mechanism assembly M4			
They have no interchangeability, refer to Section 5 Exploded views and parts list and Section 2 Mechanism adjustment.			
Section 6 ELECTRICAL PARTS LIST			
MAIN BOARD ASSEMBLY 03	SLK1036-00A	SLK1112-00A	No. interchangeability
FG AMP BOARD ASSEMBLY 56	—	SLK2072-00A	Added

SECTION 2
MECHANISM REPAIR/ADJUSTMENT PROCEDURES

2.1 BEFORE MAKING REPAIR/ADJUSTMENT

2.1.1 Precautions

(1) When using the soldering iron, be sure to disconnect the power cord of the main unit from the AC outlet beforehand.
(2) Pay attention not to damage the wires when connecting/disconnecting the connectors.
(3) Do not touch the parts around the adjustment point because of wrongly specifying the defective point.
(4) Pay special attention not to injure claws, etc. by accident during the repair operation.
(5) When mounting the cassette housing assembly, set the unit exclusively to the mechanism assembly position. (Refer to chapter 2.3.2.)
(6) When remove any slit washers, replace them new one.

2.1.2 How to unload the cassette tape manually

When the unit malfunctions with the cassette tape being left loaded and the cassette tape cannot be ejected, remove the cassette tape in the following manner:

(1) Be sure to disconnected the power cord and remove the top cover.
(2) For unloading, rotate the loading motor in the main deck assembly manually toward you. At this time, unload the tape by rotating the capstan motor counterclockwise and winding the tape so that the grease does not come into contact with the slackened tape.
(3) When the tape comes to the position where the pole base assemblies (supply side, take—up side) and guide arm assembly are hidden by the cassette shell, stop rotating the capstan motor, and check that the tape is fully wound up.
(4) When the capstan motor is further rotated counterclockwise, the cassette housing is ejected, then the cassette tape may be removed.

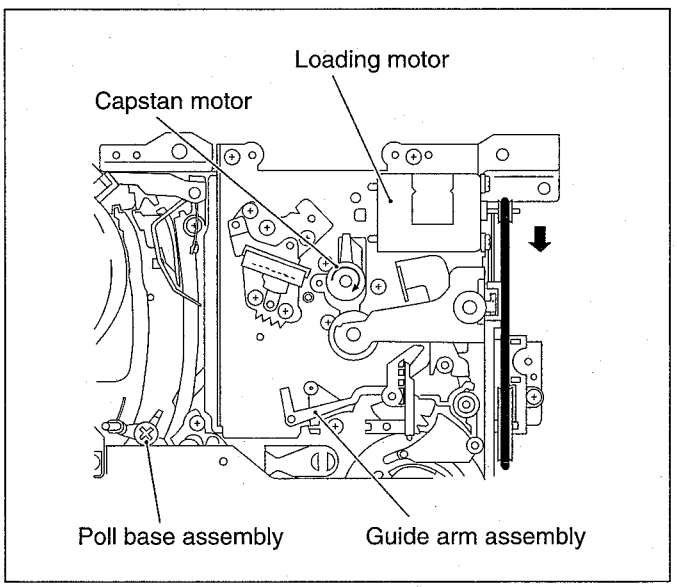


Fig. 2-1-1

2.1.3 Special implements and Tools Required for Adjustment

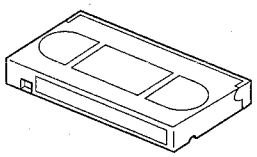
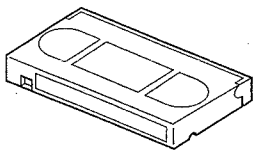
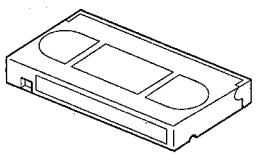
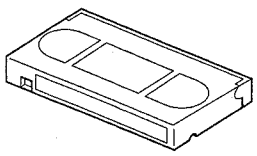
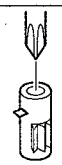
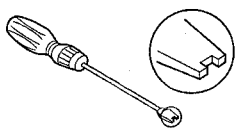
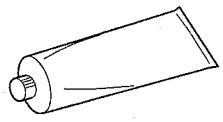
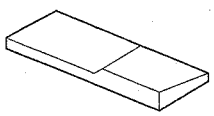
Alignment tape (SP) MHP	Alignment tape MBP-X
	
Alignment tape (EP) MHP-L (Recording CH-1 only)	Cassette torque meter PUJ42881
	
A/C head position bit PTU94010	Roller driver PTU94002
	
Grease KYODO-SH-P/MD-2000/KANTO-GB-TS-1 Oir COSMO-HV56	Parallel check plate PGJ05035 (0.05 mm)
	

Table 2-1-1 Special implements and tools required for adjustment

2.1.4 Specifications of alignment tape

• MHP

Video Signal	Audio Signal	Applications
VHS SP Stairstep	7kHz	• Interchangeability adjustment • PB switching point adjustment.

• MHP-L (Recording CH-1 only)

Video Signal	Audio Signal	Applications
VHS EP Stairstep	–	• Interchangeability adjustment

• MBP-X

Video Signal	Audio Signal	Applications
VHS SP Stairstep	7kHz	• X-value adjustment
(1 field per 5 frame does not contain video and audio)		

2.2 MAINTENANCE AND CHECK

2.2.1 Location of main mechanical parts

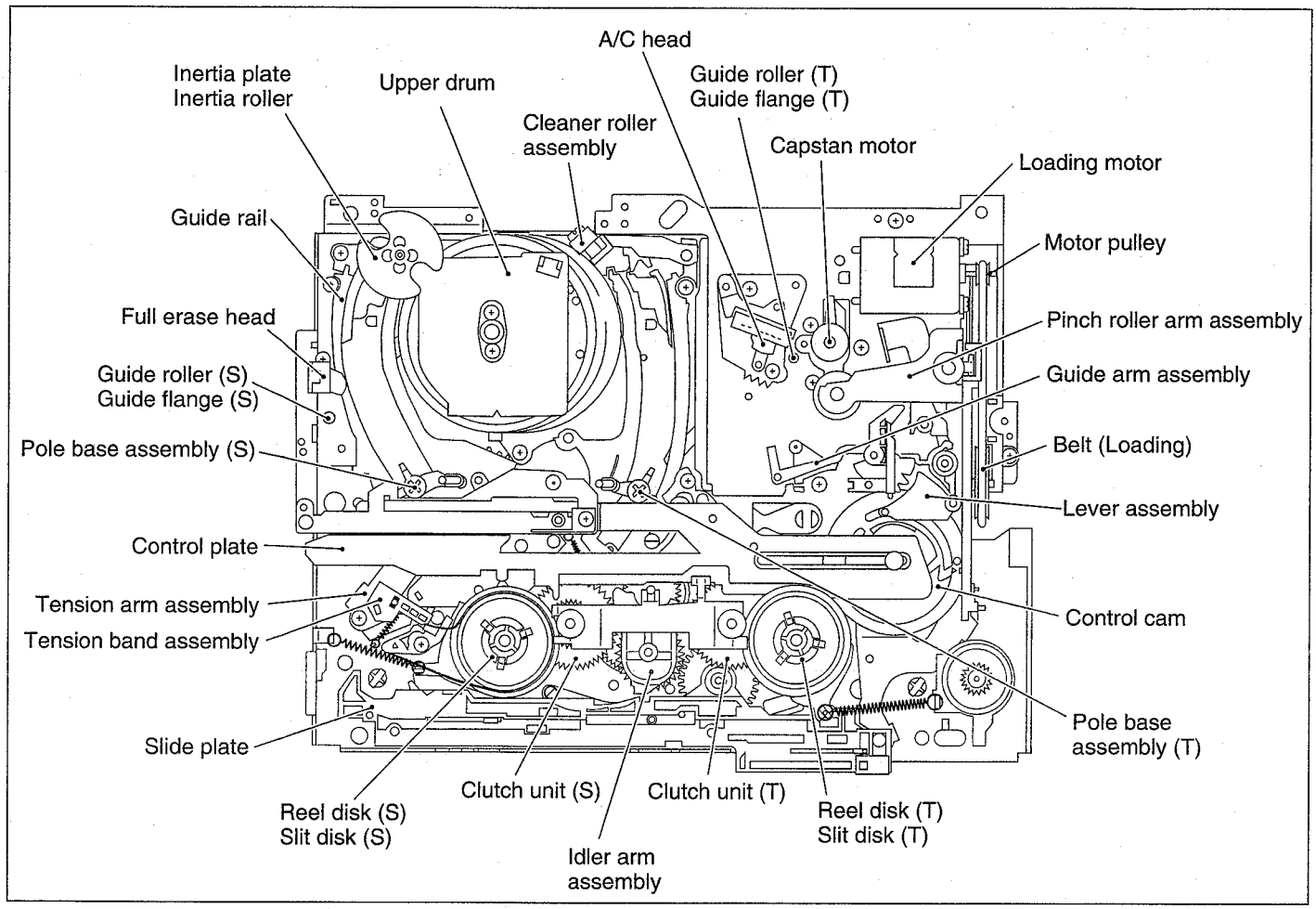


Fig. 2-2-1 Main deck top side

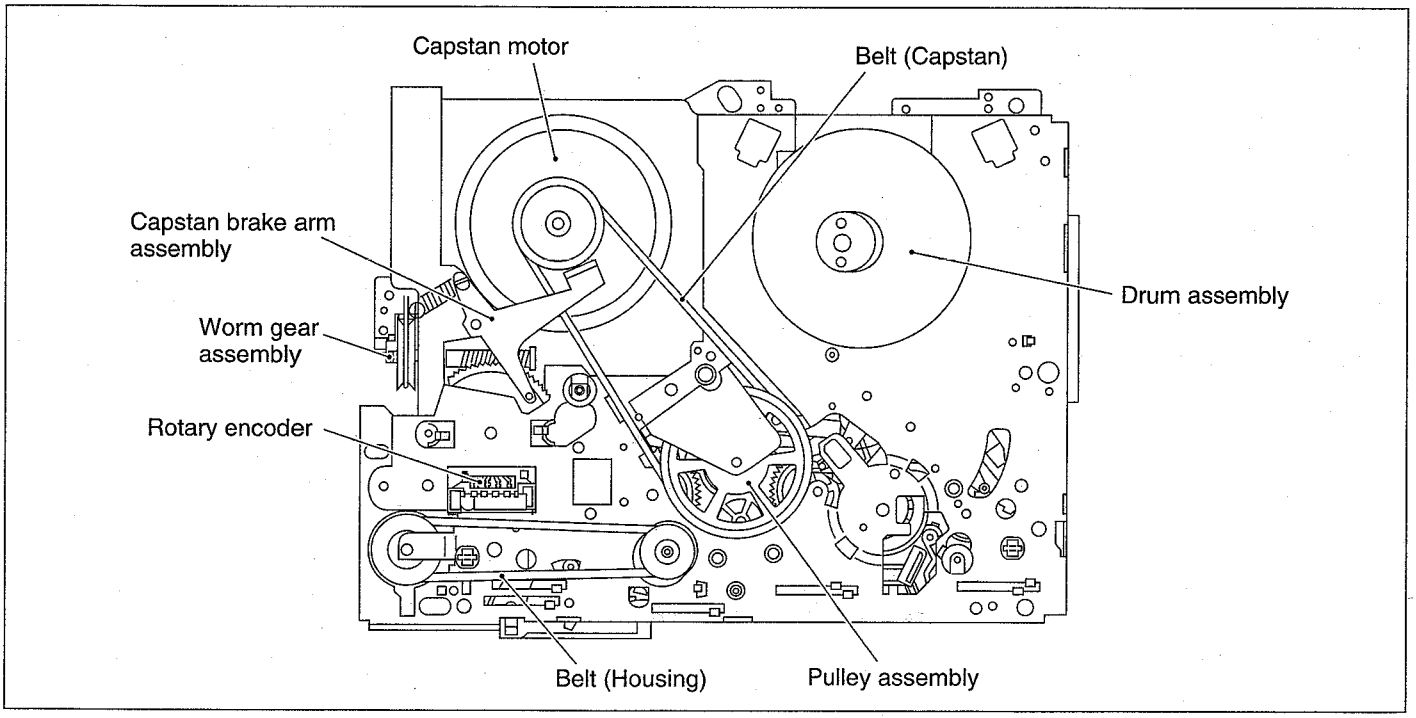


Fig.2-2-2 Main deck bottom side

2.2.2 Maintenance of main parts and periodical reference

Table 2-2-1 Maintenance & Check Schedule is compiled as standard of main parts replacement on the assumption that the set is used in ordinary conditions. Therefore, replacing periods indicated in the table greatly differ depending on actual use and environmental conditions. If the maintenance check is not performed correctly, the service life shown in the following chart will be greatly reduced and it could affect the other units. However, it is recommended that rubber parts are replaced every three years as these could be affected by aging.

Category		Part Name	Symbol No. of Part and it appears in	Standard Service Period (Operation Hours)					Remarks
				500	1000	2000	3000	4000	
Tape transport system	1	TAPE TRANSPORT PART	–	★	★	★	★	★	–
	2	GUIDE FLANGE (S, T)	M4-26	★	★	★	★	○★	2.3.20
	3	FULL ERASE HEAD	M4-82	★	★	○★	★	●	2.3.12
	4	POLE BASE ASSEMBLY (S)	M4-112	★	★	○★	★	●	2.3.19
	5	POLE BASE ASSEMBLY (T)	M4-113	★	★	○★	★	●	2.3.19
	6	A/C HEAD ASSEMBLY	M4-108	★	★	○★	★	●	2.3.13
	7	CAPSTAN SHAFT	–	★	★	★	★	★	–
	8	PINCH ROLLER ARM ASSEMBLY	M4-107	★	○★	●	○★	●	2.3.7
	9	GUIDE ARM ASSEMBLY	M4-106	★	★	○	★	★	2.3.21
	10	UPPER DRUM ASSEMBLY	M2-23B	★	○	●	○	●	2.3.5
	11	DRUM ASSEMBLY	M2-23	★	★	●	★	●	2.3.10
Drive system	12	CAPSTAN MOTOR	M4-72			○		●	2.3.9
	13	TENSION BAND ASSEMBLY	M4-89		○	●	○	●	2.3.8
	14	CLUTCH UNIT (S)	M4-104		○	●	○	●△	2.3.11
	15	CLUTCH UNIT (T)	M4-105		○	●	○	●△	2.3.11
	16	BELT	M4-38, 70, 78		○	●	○	●	2.3.14/2.3.15
	17	MAIN BRAKE (S) ASSEMBLY	M4-91		○	●	○	●	2.3.24
	18	MAIN BRAKE (T) ASSEMBLY	M4-93		○	●	○	●	2.3.24
	19	SUB BRAKE (S) ASSEMBLY	M4-92		○	●	○	●	2.3.18
	20	SUB BRAKE (T) ASSEMBLY	M4-94		○	●	○	●	2.3.17
	21	CAPSTAN BRAKE ARM ASSEMBLY	M4-123			●		●	2.3.9
	22	IDLER ARM ASSEMBLY	M4-103			●		●	2.3.16
	23	REEL DISK (S) (SPACER)	M4-95, 96, 97, 98			●		●	2.3.11
	24	REEL DISK (T)	M4-99, 100, 101			●		●	2.3.11
	25	SLIT DISK (S)	M4-35			●		●	2.3.25
	26	SLIT DISK (T)	M4-36			●		●	2.3.25
	27	WORM GEAR ASSEMBLY	M4-122			●		●	2.3.28
	28	CONTROL CAM	M4-51			●		●	2.3.23
	29	PULLEY ASSEMBLY	M4-102			●		●	2.3.27
	30	CONTROL PALTE	M4-52			●		●	2.3.11
	31	SLIDE PLATE	M4-65			●		●	2.3.24
	32	LOADING ARM ASSEMBLY (S)	M4-114			●		●	2.3.26
	33	LOADING ARM ASSEMBLY (T)	M4-115			●		●	2.3.26
	34	LOADING MOTOR	M4-118			○		●	2.3.22
	35	MOTOR PULLEY	M4-119			○		●	2.3.22
Other	36	CLEANER ROLLER ASSEMBLY	M4-7	○	●	●	●	●	2.3.6
	37	ROTARY ENCODER	M4-84					●	2.3.23
	38	CASSETTE HOUSING ASSEMBLY	M2-19					○	1.1/8000h replacement

★: Cleaning ○: Check and replacement if required ●Replacement △ : Lubrication to the shaft

Table 2-2-1 Maintenance & Check Schedule

2.2.3 Cleaning

Periodical cleaning of the tape transport system is desirable. Therefore, perform cleaning when a set is brought in for repairs or maintenance. Contamination of the video heads, tape guides and brush can reduce playback picture quality and in extreme cases, even damage the tape.

(1) To clean the video heads, press a quality moistened paper gently against the upper drum with fingertip and turn the drum counter clockwise by hand.

Note: Do not stroke it vertically, as this may damage the heads.

(2) For cleaning of the tape transport mechanism parts other than the upper drum, use a close weave cloth or cotton swab dipped in alcohol.

(3) After cleaning, be sure to check that the cleaned points are completely dry before loading the video tape.

2.2.4 Lubrication

It is not necessary to periodically lubricate oil or grease, apply lubrication to the new parts only when replacing them. If there is oil or grease at points which come into contact with the replaced parts, wipe it off and lubricate again.

(1) For the points where oil or grease is to be applied, refer to the mechanism assembly exploded view diagram [M][4]. For oil/grease to be used, refer to Table 2-2-1.

Classification	Name	Part No.	Symbol in Exploded View
Grease	Mal Temp SF-P	KYODO-SH-P	AA
Grease	Dry Surf	MD-2000	CC
Grease	Floil GB-TS-1	KANTO-GB-TS-1	DD
Oil	Cosmo Hydro HV56	COSMO-HV56	BB

Table 2-2-1 Greases and Oil used in the Unit

(2) Grease is not required for a replacement cassette housing assembly, as this has been applied at the factory.

2.3 REPLACEMENT OF MAIN PARTS

Whenever coming across an instruction to refer to Chapter 1.1 on "REMOVAL OF MAIN PARTS" in the section of REPLACEMENT OF MAIN PARTS , refer to SR-S365U Service Manual (No. 9330).

2.3.1 Before removing

This locates the mechanism assembly positions where parts removal and reassembling are performed.

2.3.2 How to set to the mechanism assembly position

Remove the cassette housing assembly (refer to Chapter 1.1 "REMOVAL OF MAIN PARTS"), and rotate the mode motor so that the control cam positioning hole comes to the chassis hole on the main deck assembly. In this status, the unit is set at the mechanism assembly position.

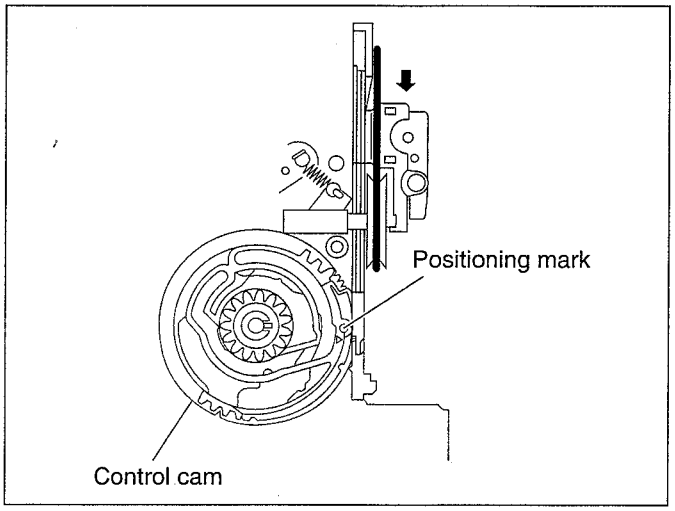


Fig. 2-3-1

2.3.3 Stator Assembly

(1) Remove the flat cable.

(2) Take out 2 screws (S10).

(3) Raise the stator assembly in the direction indicated by the arrow to remove it (also remove the inertia roller).

(4) To reinstall, first secure inertia roller and the flat cable, then insert 2 screws (S10).

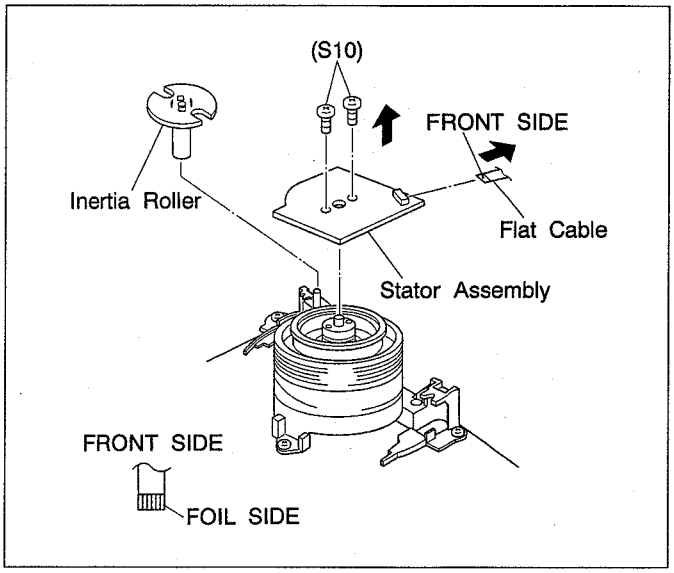


Fig. 2-3-2

(5) After reinstalling, be sure to perform PB switching point adjustment (See SECTION 3 ELECTRICAL ADJUSTMENT).

NOTE: When refitting the connector, check that the flat wire is inserted correctly.

2.3.4 Rotor Assembly

① How to remove

(1) Remove the stator assembly.
(2) Take out 2 screws (S11) and remove the rotor assembly.

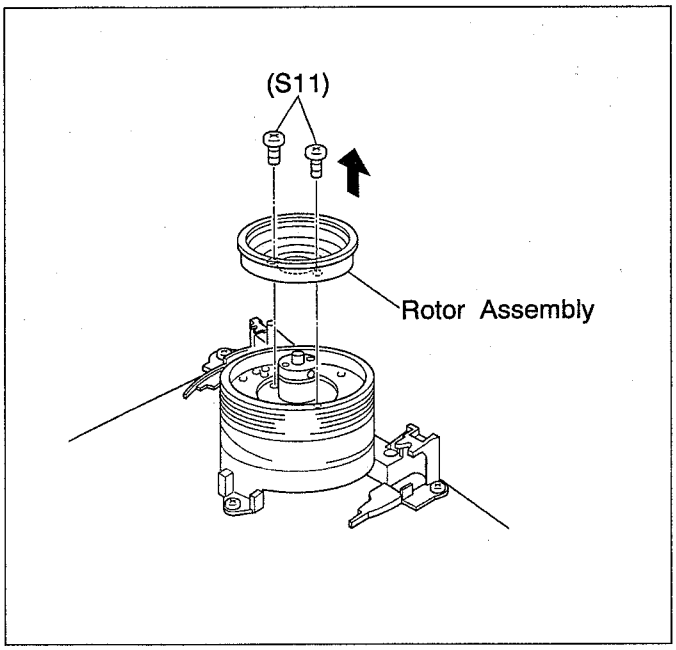


Fig. 2-3-3

② How to reassemble

(1) Align the upper drum assembly and rotor assembly phase as indicated in Fig. 2-3-4.
(2) Overlap holes (a) of the upper drum assembly with holes (b) of the rotor assembly and secure with 2 screws (S11) as indicated in Fig. 2-3-3.

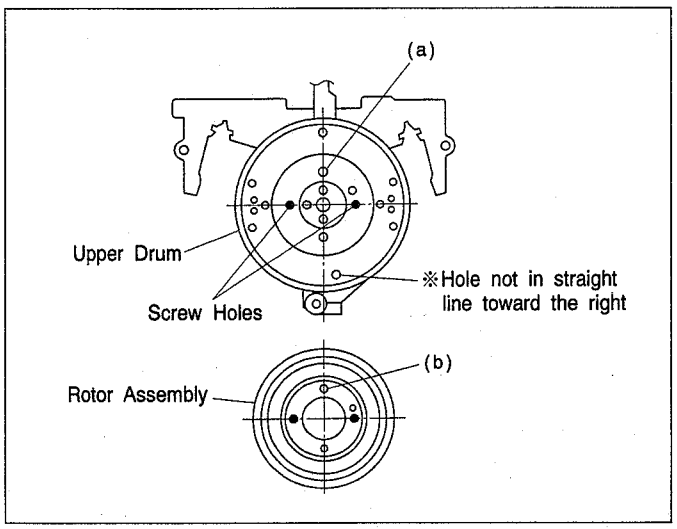


Fig. 2-3-4

2.3.5 Upper drum assembly

1. Removal

(1) Remove the stator assembly (see 2.3.3) and rotor assembly. (See 2.3.4)
(2) Use a 1.5 mm hexagonal driver to loosen the collar assembly screw and remove the collar assembly.
(3) Remove the upper drum assembly and use tweezers to remove the washer.

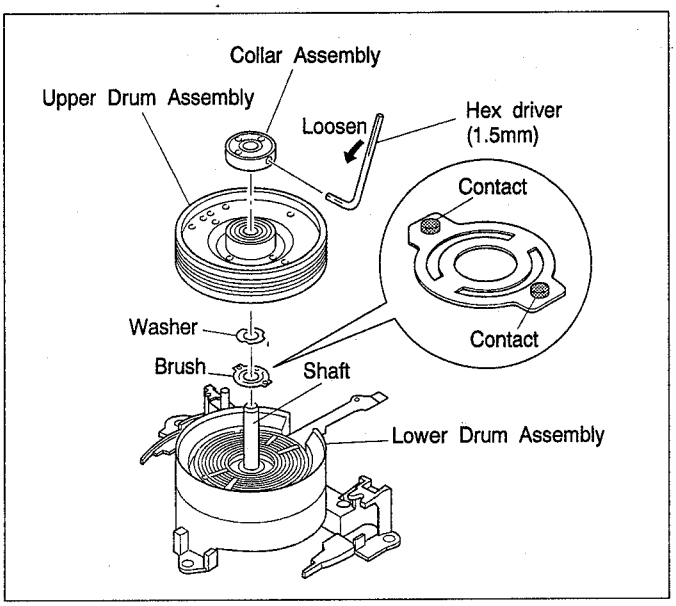


Fig. 2-3-5 (1)

NOTE: If the Brush is replaced, do not apply the grease to the contacts.

2. Installation

(1) Use an air brush to clean the lower drum assembly and the coil section of the new upper drum assembly.
(2) Set a new washer on the drum shaft as indicated in Fig. 2-3-5(1).

NOTE: Be sure to use the new washer when replace the upper drum assembly.

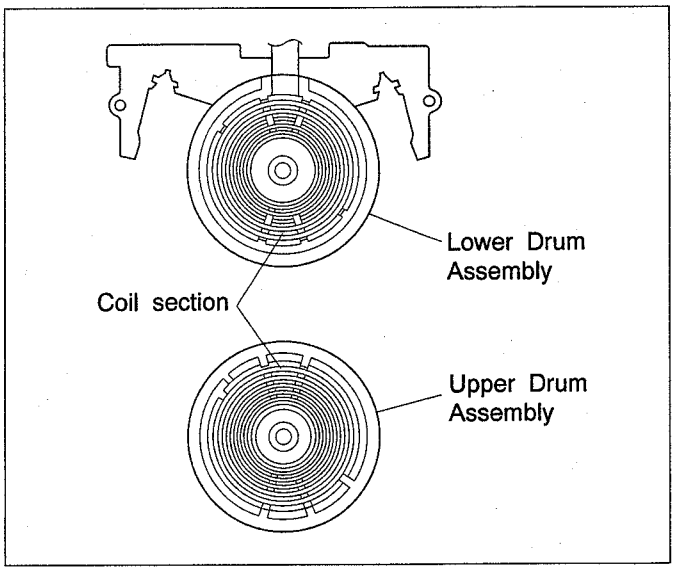


Fig. 2-3-5 (2)

(3) Note the top and bottom of the collar assembly and determine the position as indicated in Fig. 2-3-5(3).

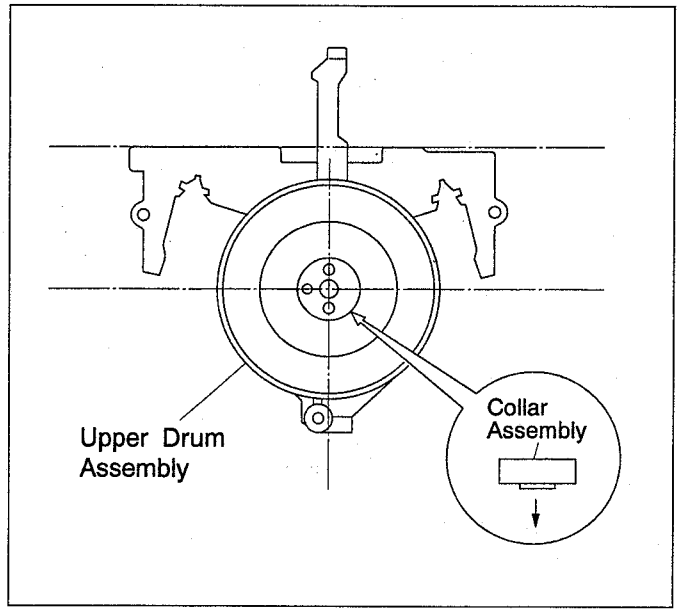


Fig. 2-3-5 (3)

(4) While pressing the collar assembly evenly from above with your fingertips, secure the hexagonal screw.

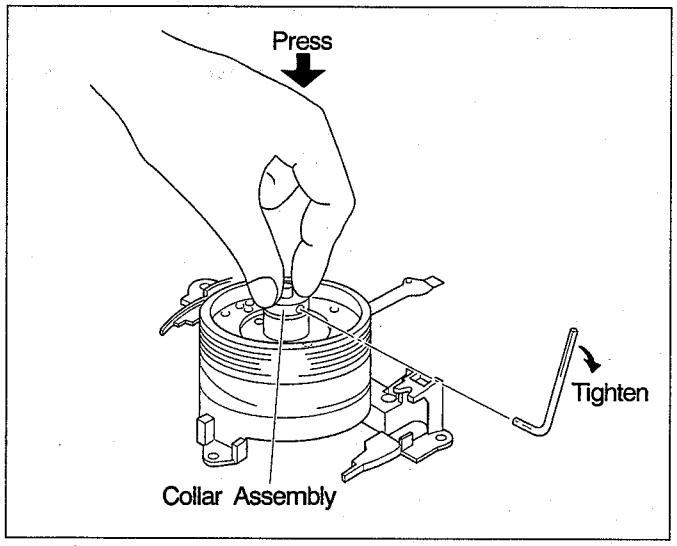


Fig. 2-3-5 (4)

(5) After installing, gently turn the upper drum by hand and confirm normal rotation.
(6) Install the rotor assembly (see 2.3.4) and stator assembly. (See 2.3.3)
(7) Clean the upper and lower drum assembly and perform the following adjustment;
- FM waveform linearity check/adjustment (see 2.5.1)
- A/C head phase (X value) check/adjustment (see 2.5.3)
- PB switching point (see 3.3.1)
- Slow tracking preset (see 3.3.2)
- SP/EP REC color level (see 3.4.6)
- S-VHS VIDEO EQ (see 3.4.7)
- Audio REC FM level (see 3.6.1)

2.3.6 Head cleaner

(1) While releasing the claws (L5) by the driver, remove the head cleaner assembly.
(2) Replace the new cleaner.
(3) Install the head cleaner assembly for ⓑ to face the drum side.
Be sure to check to clean correctly during loading/unloading mode.

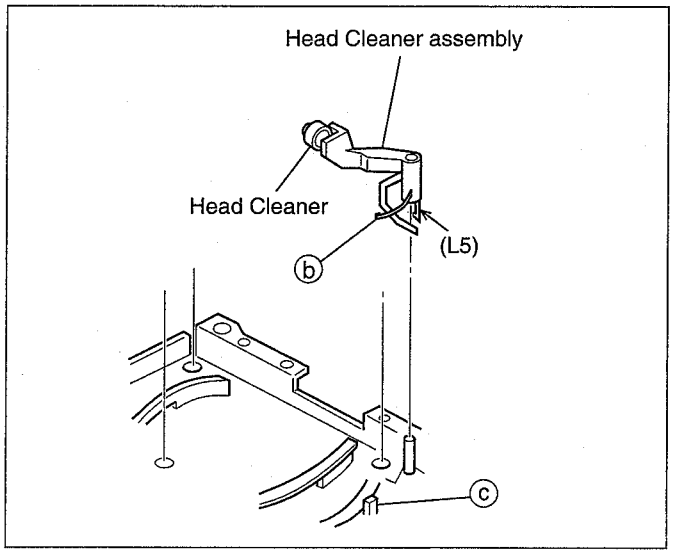


Fig. 2-3-6

2.3.7 Pinch roller arm assembly

① How to remove

(1) Remove the slit washer.
(2) While pushing aside the pinch plate in the direction of the arrow, remove the pinch roller arm assembly.

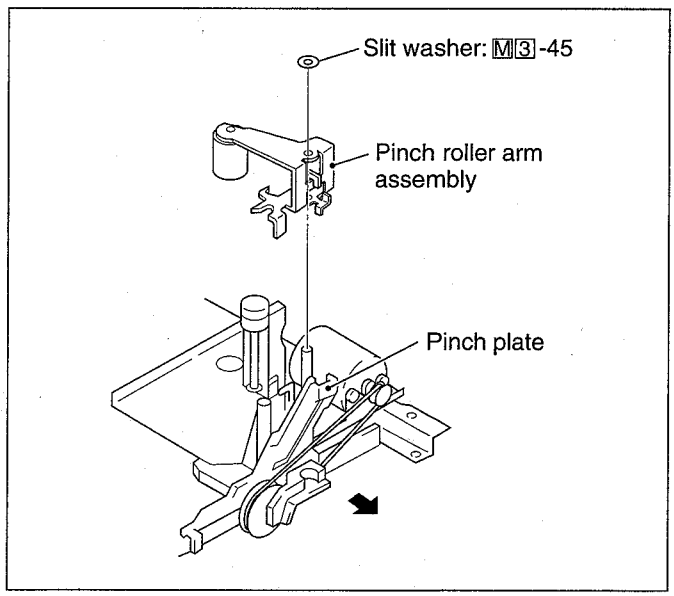


Fig. 2-3-7

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.8 Tension band assembly

① How to remove

(1) Remove the cassette housing assembly. (refer to chapter 1.1 "REMOVAL OF MAIN PARTS")
(2) Remove the screw ③.
(3) Slide part of Ⓐ to ⬅ left and then while releasing the claws, remove the tension band assembly.

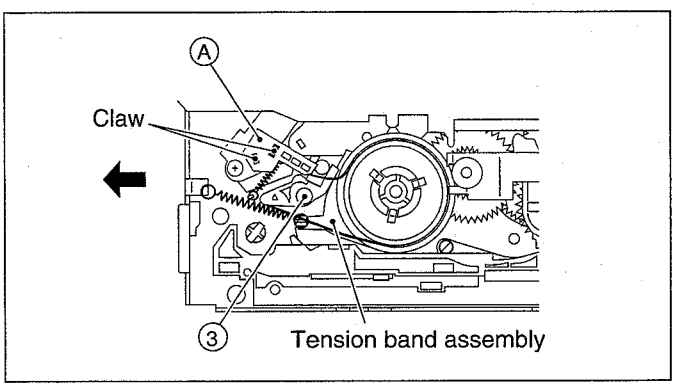


Fig. 2-3-8

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) After reassembling, check the following adjustment:
- Tension arm position check/adjustment (refer to Chapter 2.5.5)

2.3.9 Capstan motor, Capstan brake arm assembly

① How to remove

(1) Remove the mechanism assembly. (Refer to Chapter 1. 1 "REMOVAL OF MAIN PARTS".)
(2) Remove the slit washer and remove the capstan brake arm assembly.
(3) Remove the belt.
(4) Remove the three screws ④ and remove the capstan motor from the back of the mechanism assembly.

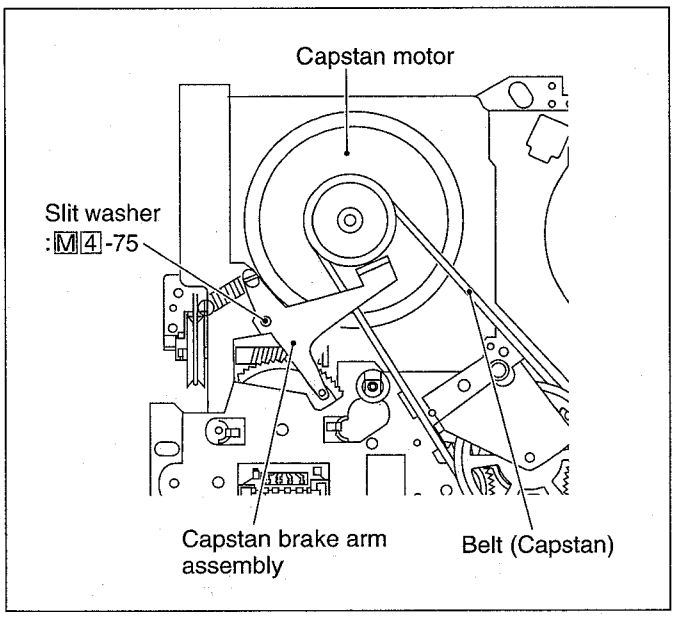


Fig. 2-3-9 (1)

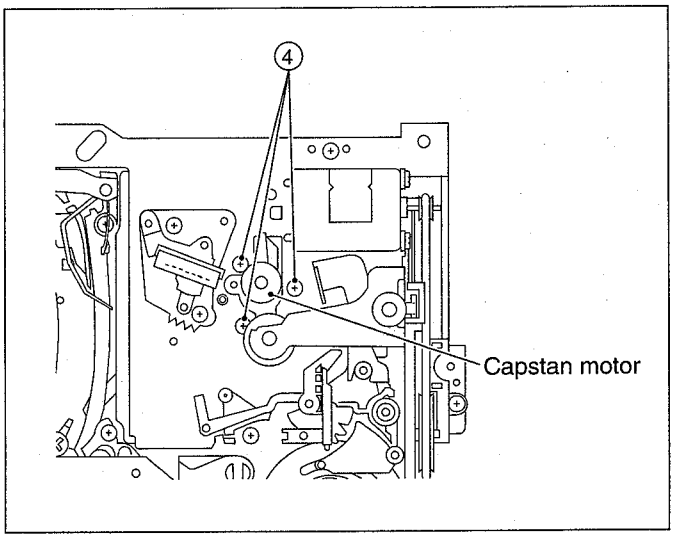


Fig. 2-3-9 (2)

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.10 Drum assembly

Note: A drum base is installed with the drum assembly in order to facilitate service maintenance. However, it is no longer necessary for the SR-S365U(A), so please remove it.
To remove the drum base, remove the three screws ⑤. [Refer to the Fig. 2-3-10 (1).]

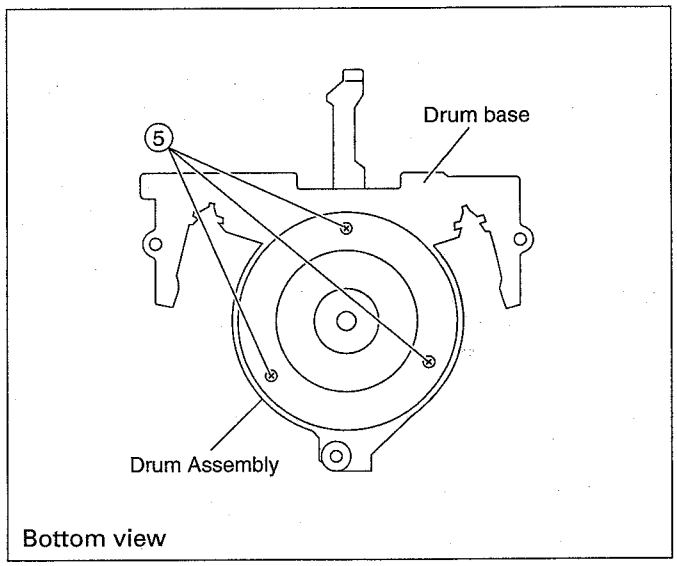


Fig. 2-3-10 (1)

① **How to remove**

(1) Remove the mechanism assembly. (Refer to Chapter 1. 1 "REMOVAL OF MAIN PARTS".)

(2) Be carful the drum assembly drop down, remove the three screws ⑦ and remove the drum assembly.

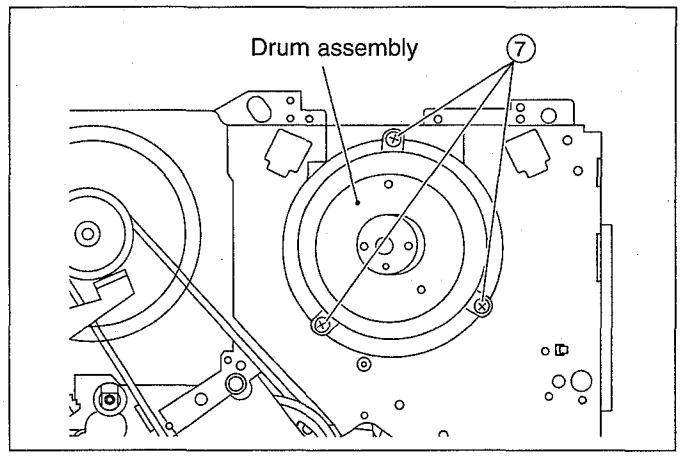


Fig. 2-3-10 (2)

② **How to reassemble**

(1) Reassemble in the reverse order of removing.

(2) After replacing the parts, clean the upper drum assembly and the lower drum assembly, then check the following adjustments:

- FM waveform linearity check/adjustment (see 2.5.1)
- A/C head phase (X value) check/adjustment (see 2.5.3)
- PB switching point (see 3.3.1)
- Slow tracking preset (see 3.3.2)
- SP/EP REC color level (see 3.4.6)
- S-VHS VIDEO EQ (see 3.4.7)
- Audio REC FM level (see 3.6.1)

2.3.11 Clutch unit (S), (T), Control plate, Reel disk (S), (T)

① **How to remove**

(1) Remove the two slit washers and then remove the reel bracket.

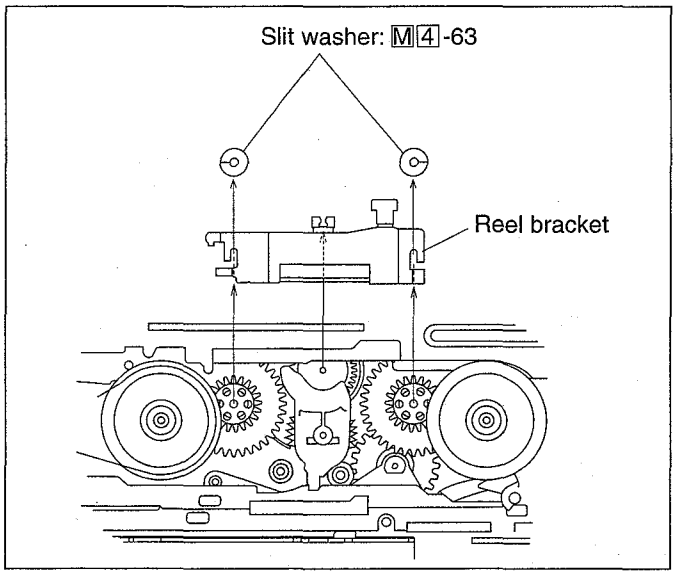


Fig. 2-3-11 (1)

(2) Release the claw and then release the tension band assembly from the reel disk (S). (Refer to Fig. 2-3-5.)

(3) Remove the reel disks (S), (T). The reel disks for SP side and TU side are different. Make sure to install the correct ones.

(4) Remove the screw ⑧ and remove the control bracket 2.

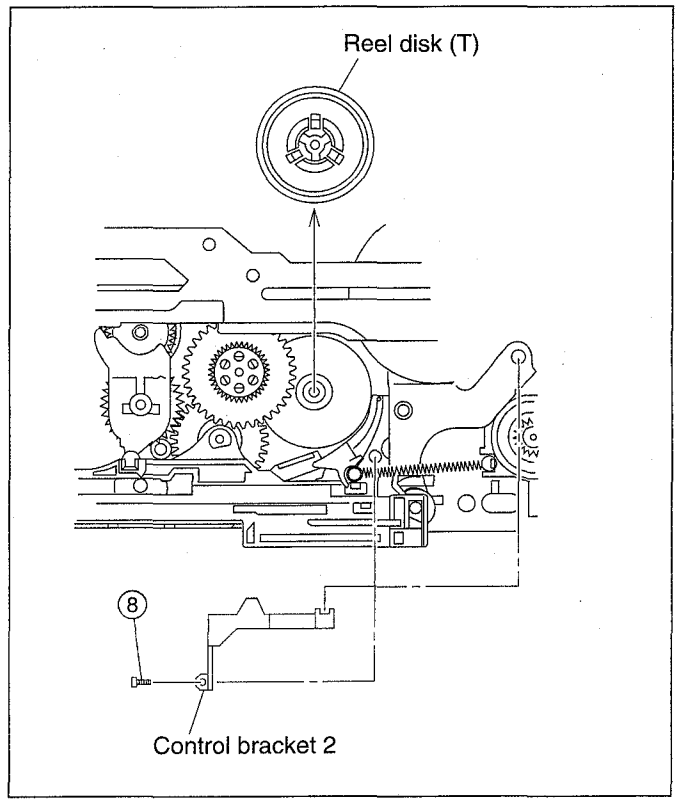


Fig. 2-3-11 (2)

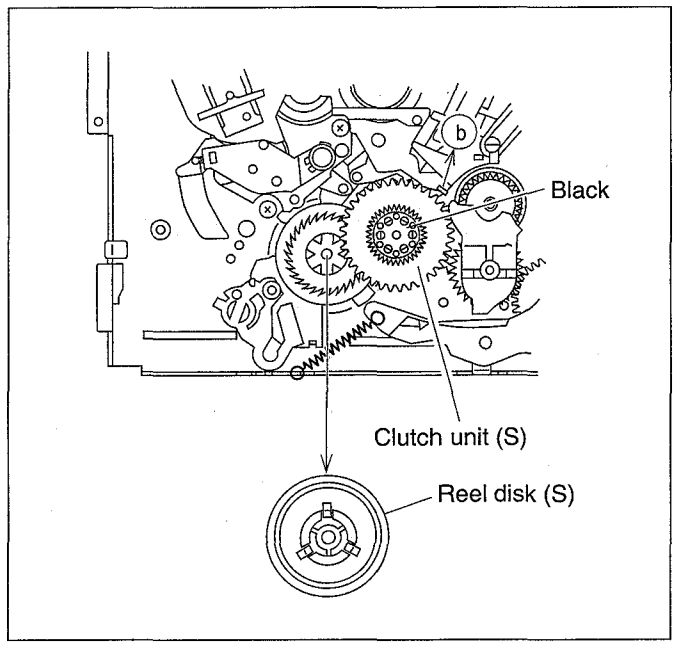


Fig. 2-3-11 (3)

(5) Remove the screw ⑨ and screw ⑩.
(6) Remove the earth plate and the control bracket.

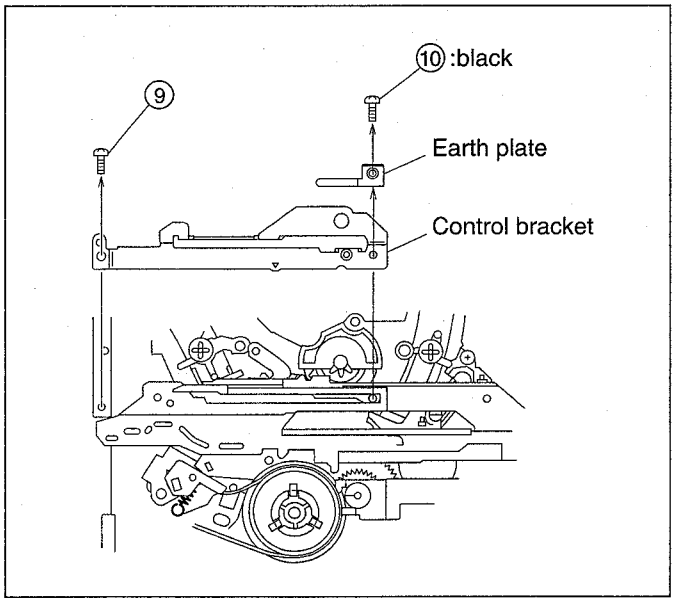


Fig. 2-3-11 (4)

(7) Remove the slit washer.
(8) Release the hooks at the two points and remove the control plate.
(9) Remove the clutch units (S), (T).

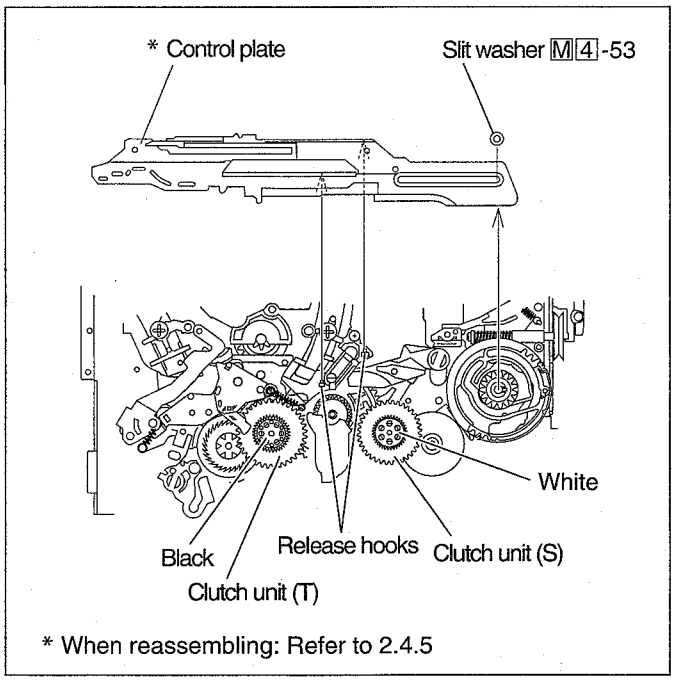


Fig. 2-3-11 (5)

② How to reassemble the reel disk (S), (T)

(1) Reel disk (S)

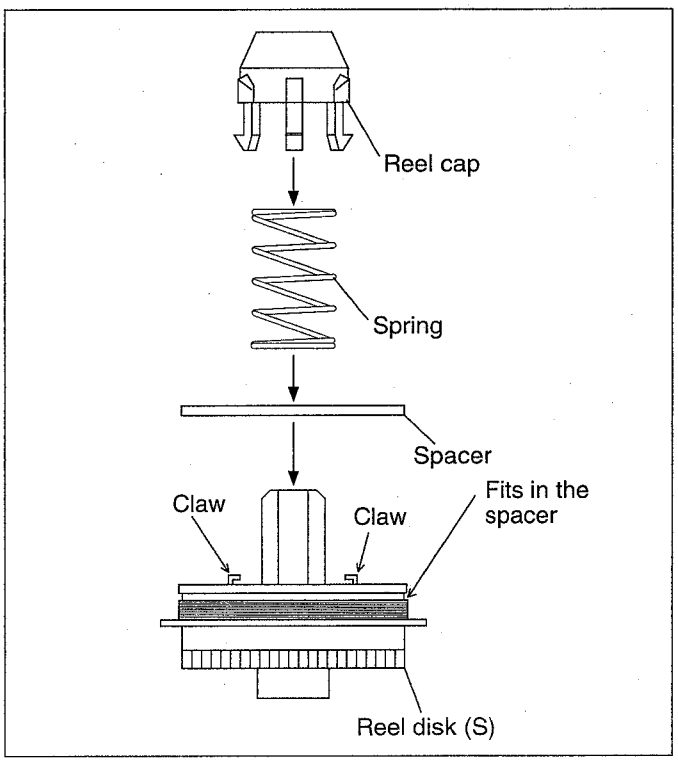


Fig. 2-3-11 (6)

(2) Reel disk (T)

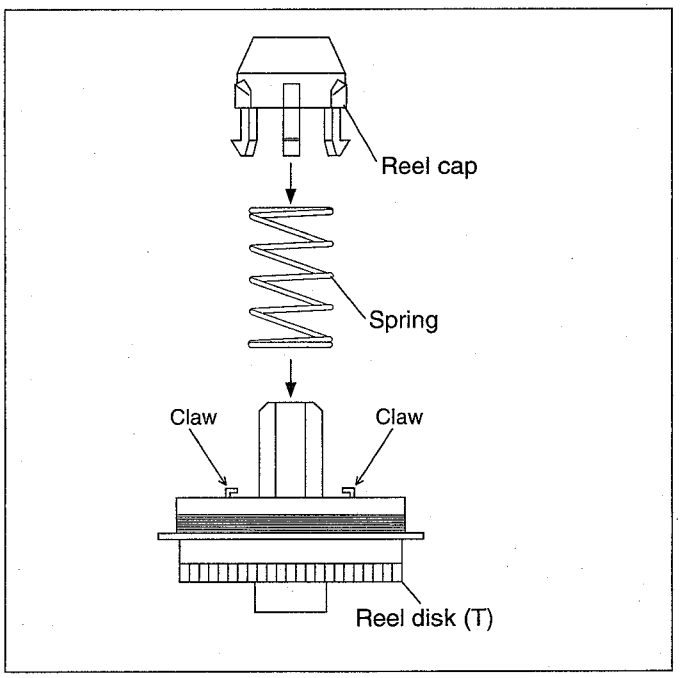


Fig. 2-3-11 (7)

③ How to reassemble

(1) Reassemble in the reverse order of removing.
(2) When mounting the control plate, set the phase of the control plate appropriately by referring the "How to mount the main parts".
(Refer to Chapter 2.4.5.)

2.3.12 Full-erase head

(1) Remove the wire.
(2) Remove the screw ⑪ and remove the full-erase head for replacement.

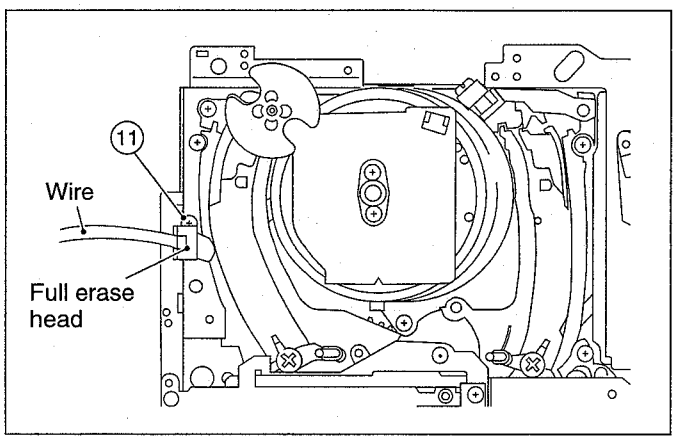


Fig. 2-3-12

2.3.13 A/C head assembly

① How to remove

(1) Remove the wire.
(2) Remove the three screws ⑬ and remove the A/C head assembly.

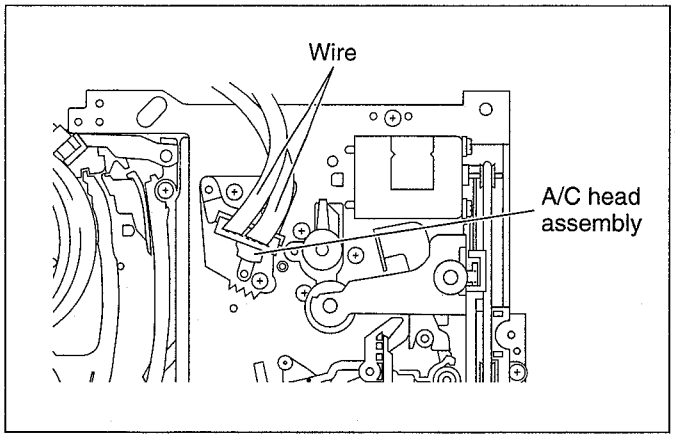


Fig. 2-3-13 (1)

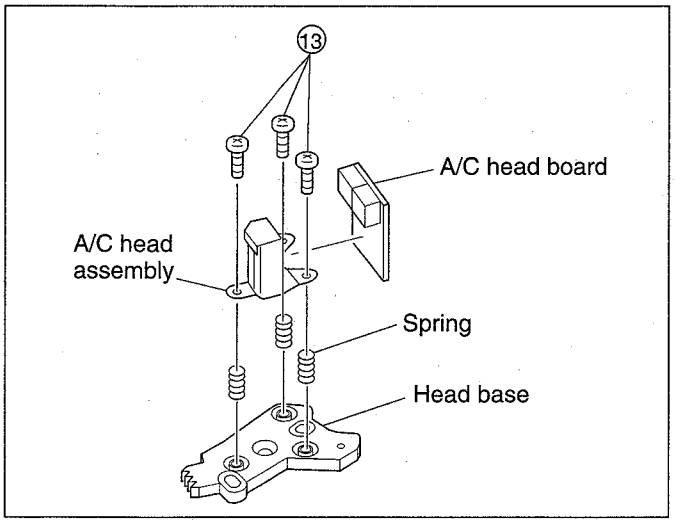


Fig. 2-3-13 (2)

② How to reassemble

(1) To make the adjustment after reassembling easier, set the mounting height temporarily, then reassemble in the reverse order of removing.

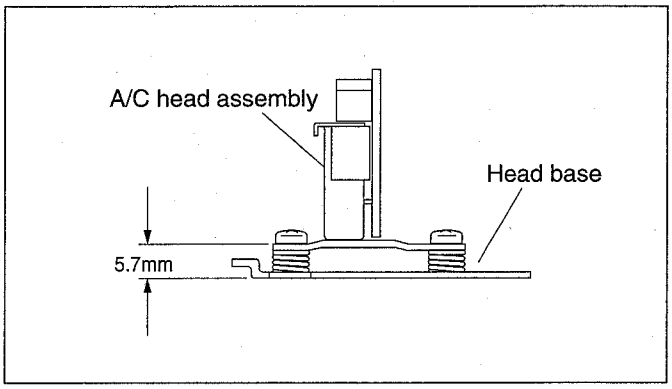


Fig. 2-3-13 (3)

(2) After reassembling, clean the A/C head and perform the following adjustment:
- Interchangeability adjustment (refer to Chapter 2.5)

2.3.14 Belt (Loading)

(1) Remove the belt (loading) from the worm gear and motor pulley.

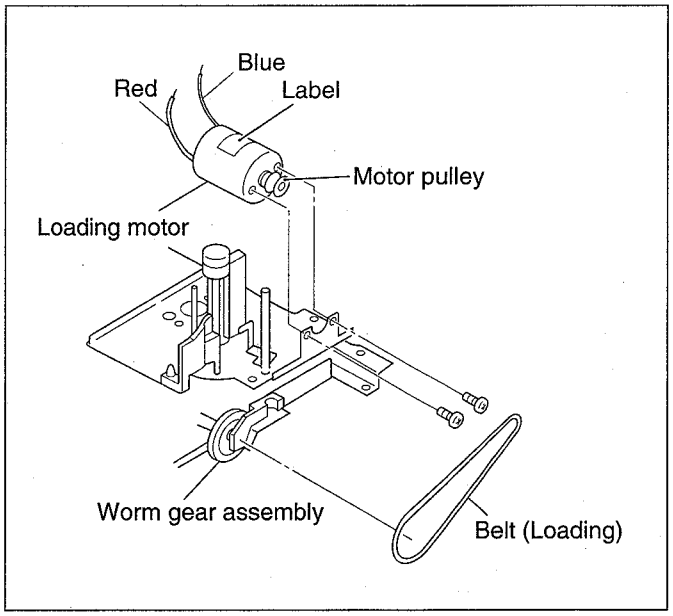


Fig. 2-3-14

2.3.15 Belt (Capstan, Housing)

① How to remove

(1) Remove the mechanism assembly. (Refer to Chapter 1. 1 "REMOVAL OF MAIN PARTS".)

(2) Remove the belts from the pulleys at each point, and replace them with new ones.

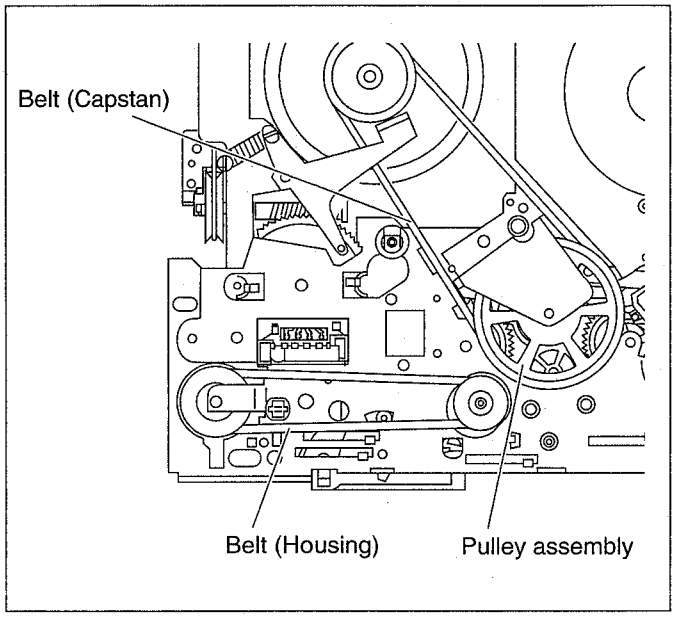


Fig. 2-3-15

2.3.16 Idler assembly

① How to remove

(1) Remove the two slit washers and remove the reel bracket. (Refer to Fig. 2-3-11(1).)

(2) Remove the control plate. (Refer to Chapter 2.3.11.)

(3) Release the idler lever while push the idler assembly, take out the idler assembly.

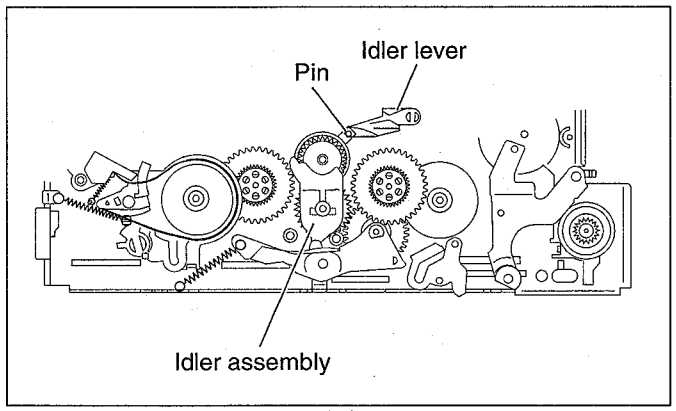


Fig. 2-3-16

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.17 Sub brake assembly (T)

① How to remove

(1) Remove the two slit washers and then remove the reel bracket. (Refer to Fig. 2-3-11 (1).)

(2) Take out the reel disk (T). (Refer to Fig. 2-3-11 (2).)

(3) Remove the spring in the sub-brake assembly, and remove the sub brake assembly by releasing the hook.

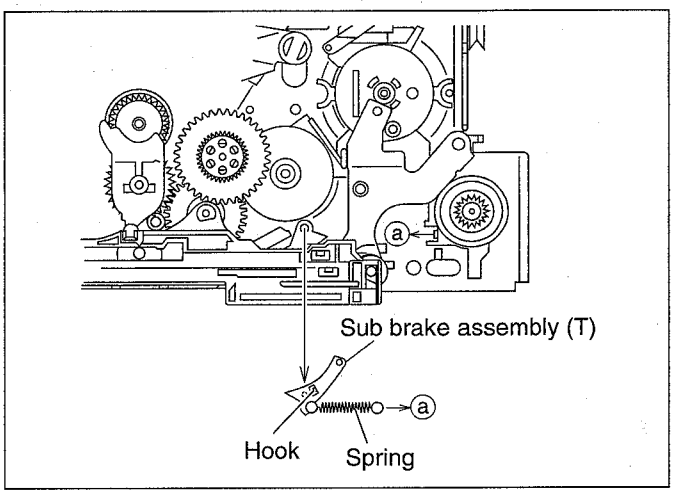


Fig. 2-3-17

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.18 Sub brake assembly (S)

① How to remove

(1) Remove the two slit washers and remove the reel bracket. (Refer to Fig. 2-3-11 (1).)

(2) Release the catch and release the tension band assembly from the reel disk (S). (Refer to Fig. 2-3-8.)

(3) Take out the reel disk (S).

(4) Remove the spring in the sub brake assembly (S), and take out the sub brake assembly.

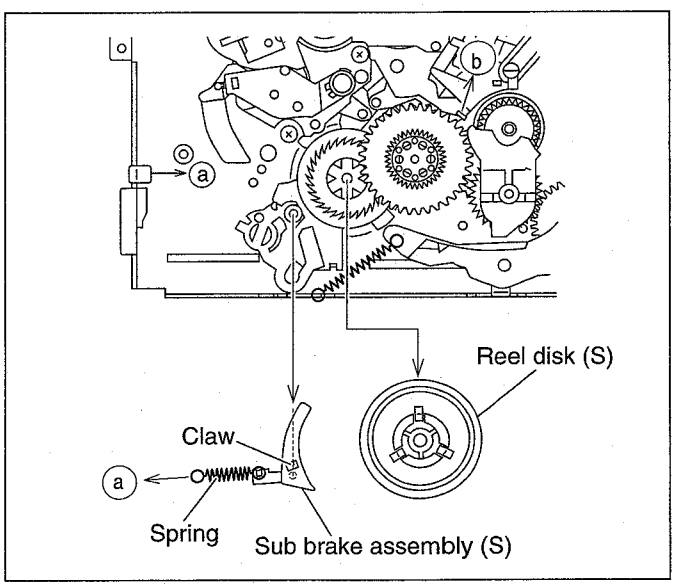


Fig. 2-3-18

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.19 Pole base assembly (S), (T)

① How to remove

(1) Remove the head cleaner arm assembly. (Refer to chapter 2.3.6)
(2) Remove the two screws ⑭.
(3) Rotate the loading motor toward you, and shift the pole base assembly to near the loading end position. (Refer to Fig. 2-3-19.)
(4) While releasing the hook of the pole base assembly from the guide rail and the pin of it from the loading arm , take out the pole base assembly.

Note:
- **If the control plate is removed, shift the pole base assembly by hand.**
- **A spacer is inserted between the pole base of the supply side assembly and loading arm assembly. Care must always be exercised with this spacer.**

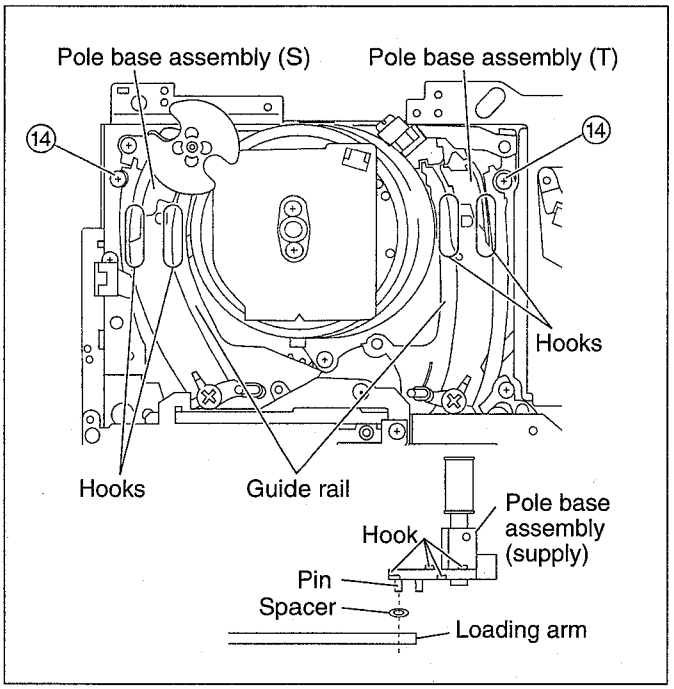


Fig. 2-3-19

② How to reassemble

(1) Reassemble in the reverse order of removing. (Be carefull not to touch the drum assembly)
(2) After reassembling, clean the pole base assemblies (S), (T) and perform the following adjustments:
- Tape transport check/adjustment (Refer to chapter 2.5.6)
- Interchangeability adjustment (Refer to chapter 2.5)

2.3.20 Guide flange (S), (T)

① How to remove

(1) Remove the two screws ⑮.
(2) Take out the guide roller (S), (T) and guide flanges (S), (T).

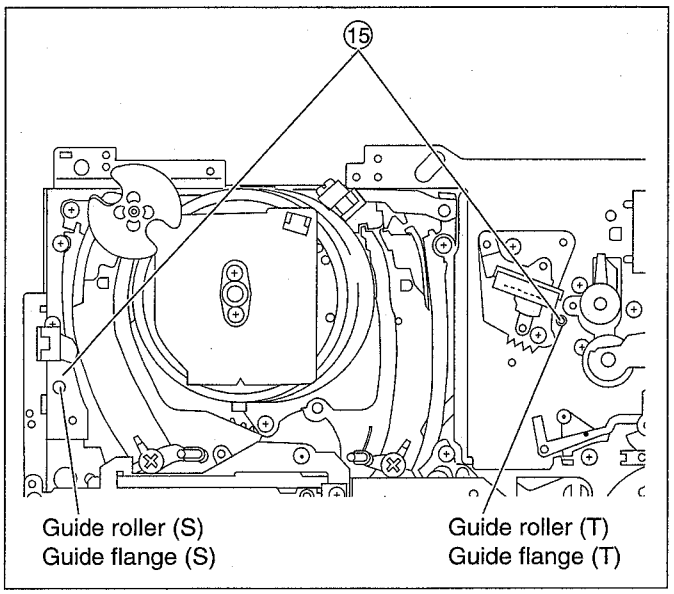


Fig. 2-3-20 (1)

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) To make the tape transport adjustment easier after replacement, tighten the screw once until it reaches the end, then rotate it by the following value in the releasing direction to set the temporary height.
- Guide flange (S)..... 2.5 turns
- Guide flange (T)..... 1.5 turns

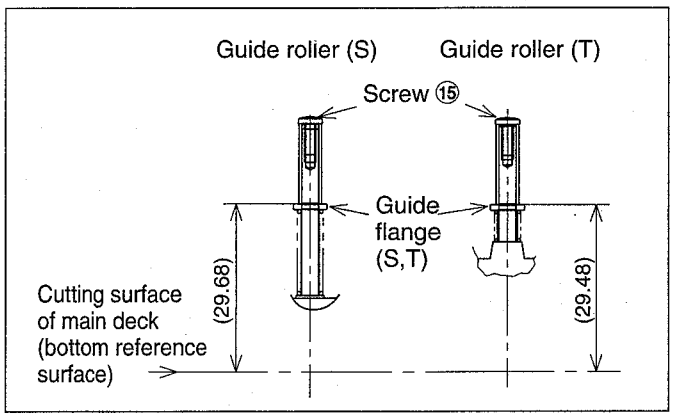


Fig. 2-3-20 (2)

(3) After setting the temporary height, check the following adjustments:
- Interchangeability adjustment (refer to Chapter 2.5)

2.3.21 Guide arm assembly

① How to remove

(1) While releasing the hook remove the lid guide.
(2) Remove the spring.
(3) Remove the Guide arm assembly.

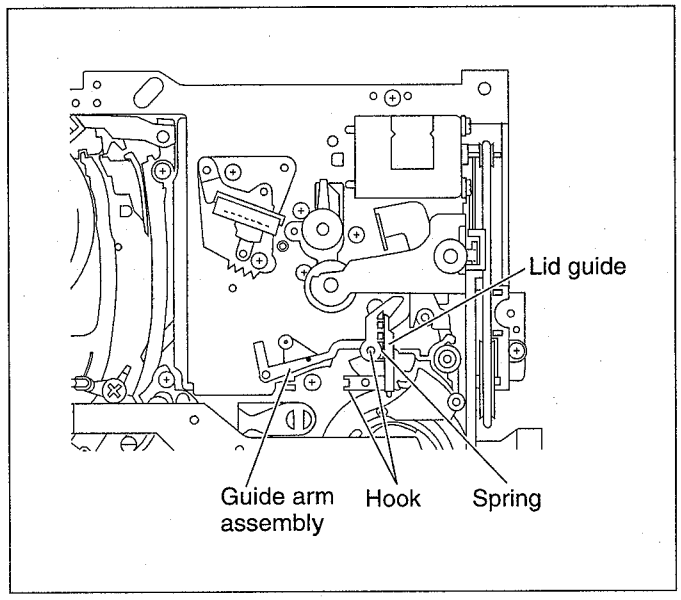


Fig. 2-3-21

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) After replacing the parts, clean the guide arm assembly and check the following adjustments:
- Interchangeability adjustment (Refer to Chapter 2.5)

2.3.22 Loading motor, Motor pulley

① How to remove

(1) Remove the belt from the motor pulley.
(2) Remove the connector CN603 from the MAIN board and remove the wire from the loading motor.
(3) Remove the two screws ⑯ and remove the loading motor.
(4) De-solder the wire and remove it from the loading motor.

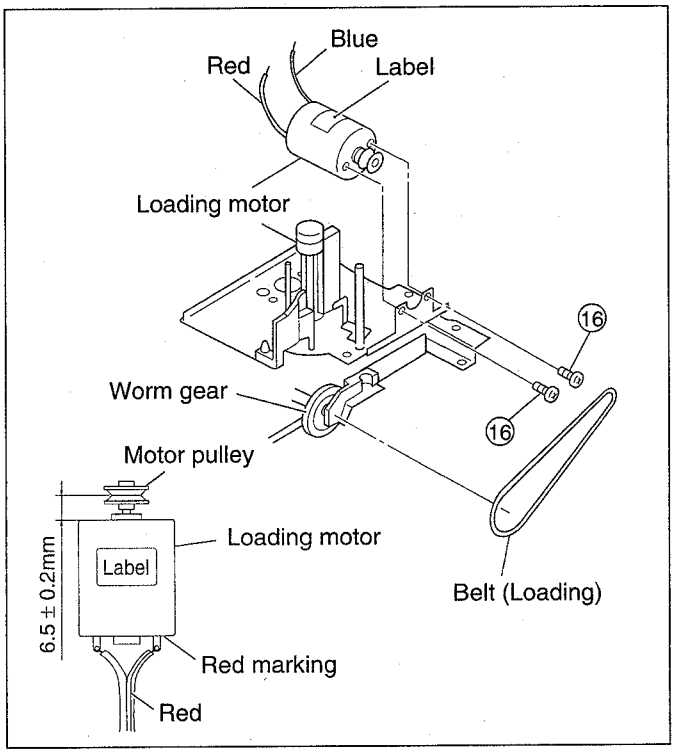


Fig. 2-3-22

② How to reassemble

(1) Mount the loading motor and motor pulley as shown in Fig. 2-3-22.
(2) Reassemble in the reverse order of removing.

2.3.23 Rotary encoder, Control cam

① How to remove

(1) Remove the reek disk (T) and the control plate. (Refer to Chapter 2.3.11.)
(2) Remove the slit washer and remove the lever assembly.

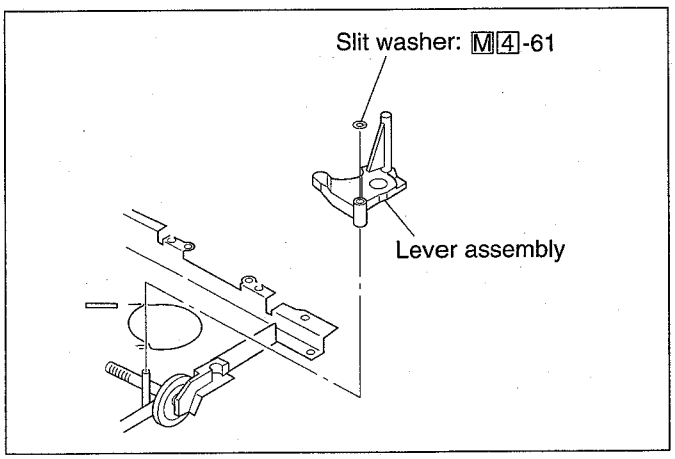


Fig. 2-3-23 (1)

(3) While releasing the claw of pinch plate, slide it backwards.
(4) While releasing the claw and rotating the guide arm assembly by clockwise, remove the control cam.

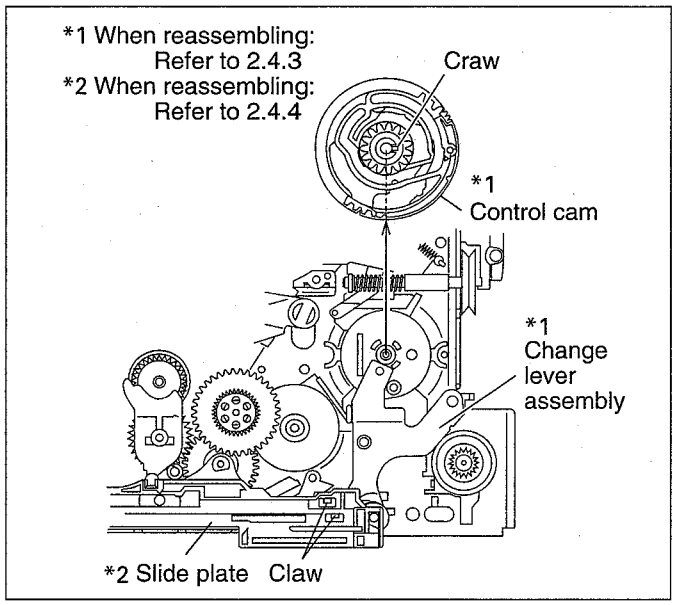


Fig. 2-3-23 (2)

(4) Remove the slide plate. (Refer to Chapter 2.3.24.)
(5) Take out the change lever assembly.
(6) While releasing the craws at both sides, take out the rotary encoder.

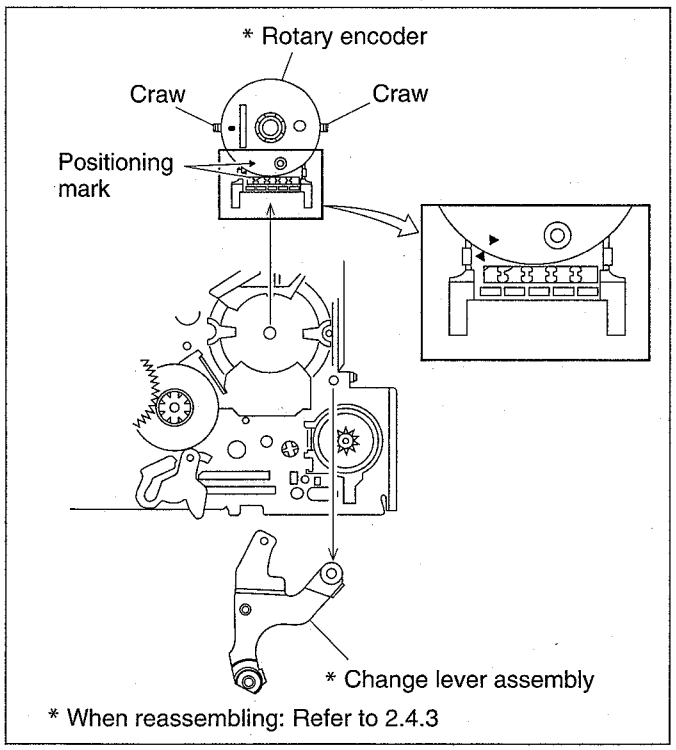


Fig.2-3-23 (3)

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) When mounting the rotary encoder, control cam or control plate, set the phases of each part appropriately by referring to the "How to mount the main parts". (Refer to Chapter 2.4.3 and Chapter 2.4.5.)

2.3.24 Slide plate, Main brake assembly (S), (T)

① How to remove

(1) Remove the mechanism assembly. (Refer to Chapter 1. 1 "REMOVAL OF MAIN PARTS".)
(2) Remove the sub brake assembly (T). (Refer to Chapter 2.3.17.)
(3) Remove the sub brake assembly (S). (Refer to Chapter 2.3.18.)
(4) Release the seven craws from the back of the mechanism assembly, and take out the slide plate from the front surface of the mechanism assembly.
(5) Remove the slit disk (S). (Refer to Chapter 2.3.25.)
(6) Take out the main brake assembly (T).
(7) While rotating the main brake assembly, take it out.

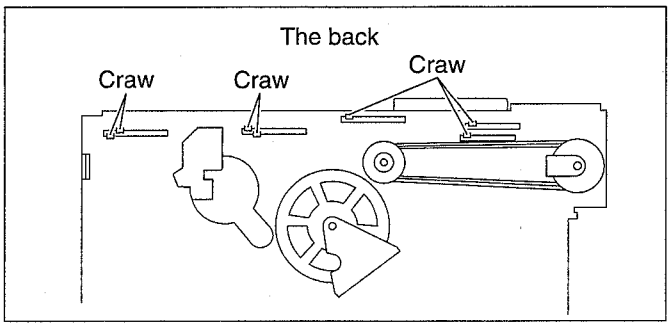


Fig.2-3-24 (1)

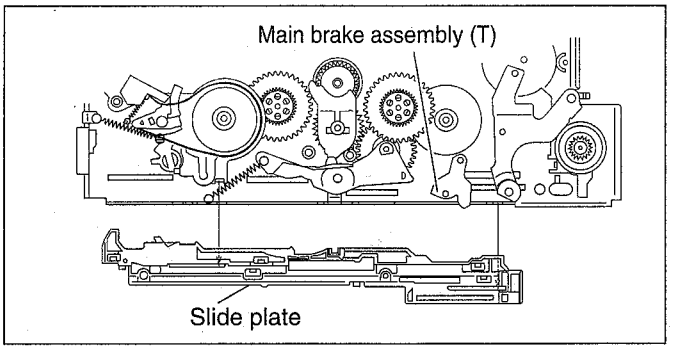


Fig. 2-3-24 (2)

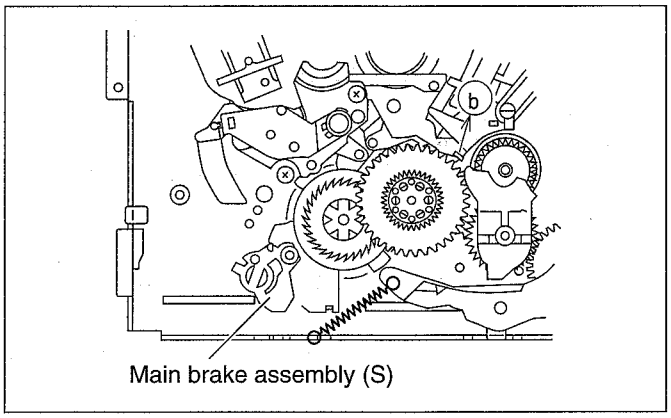


Fig. 2-3-24 (3)

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) When mounting the slide plate, set the phases of each part appropriately by referring the "How to mount the main parts". (Refer to Chapter 2.4.4.)

2.3.25 Slit disk (S), (T)

① How to remove

(1) Remove the reel disks (S), (T), control plate and clutch units (S), (T). (Refer to Chapter 2.3.11.)

(2) While releasing the take up head and tension arm lever (See Fig. 2-3-26 (2)), take out the slit disks (S), (T).

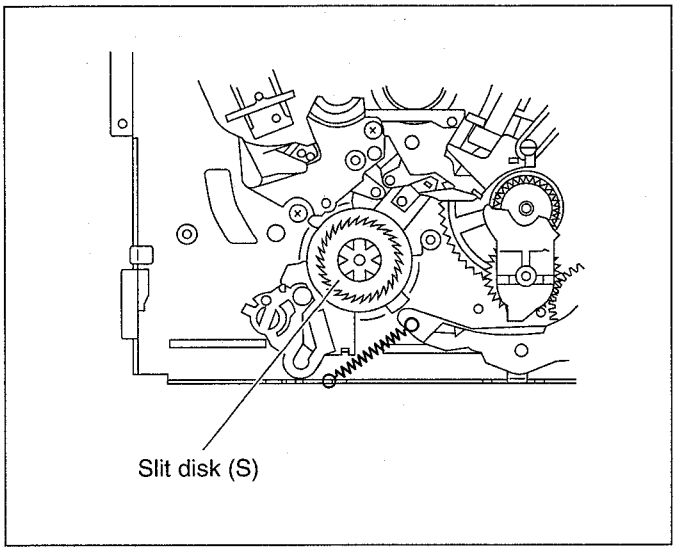


Fig. 2-3-25 (1)

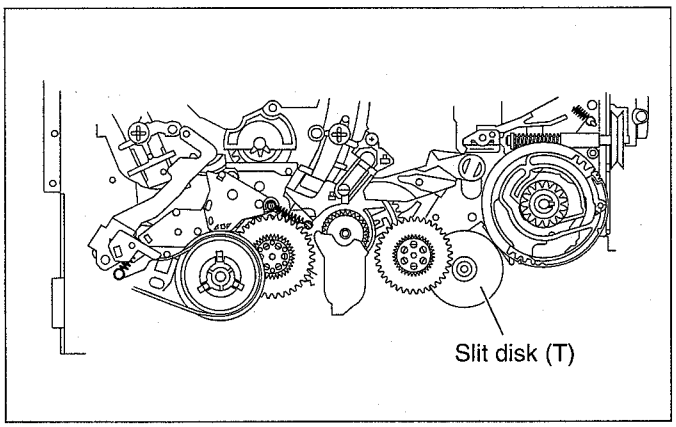


Fig. 2-3-25 (2)

② How to reassemble

(1) Reassemble in the reverse order of removing.

2.3.26 Guide rail, Loading arm assembly

① How to remove

(1) Remove the head cleaner assembly and inertia roller. (Refer to Chapter 2.3.3, 2.3.6.)

(2) Remove the reel disk (S), control plate and clutch unit (S). (Refer to Chapter 2.3.11.)

(3) Remove the slit washer and remove the tension arm .

(4) Take out the take-up lever, tension arm lever and take-up head.

(5) Remove the pole base assembly. (Refer to 2.3.19.)

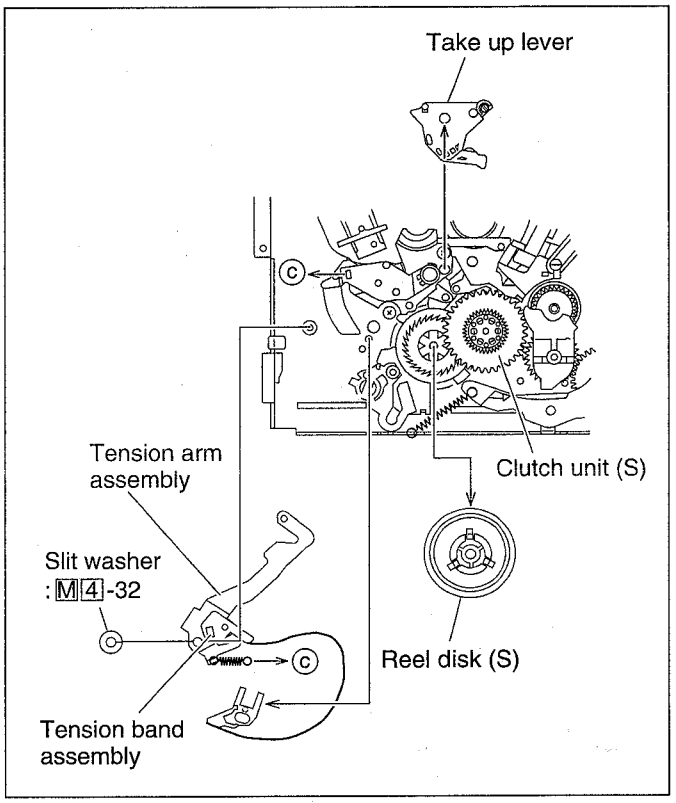


Fig. 2-3-26 (1)

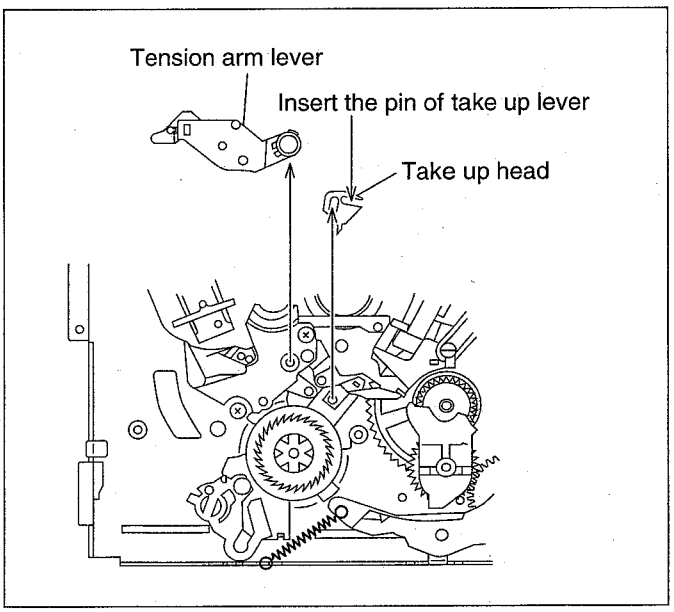


Fig. 2-3-26 (2)

(6) Remove the five screws ⑰, and remove the guide rail by releasing the craw.
(7) Take out the loading arm assemblies (S), (T).

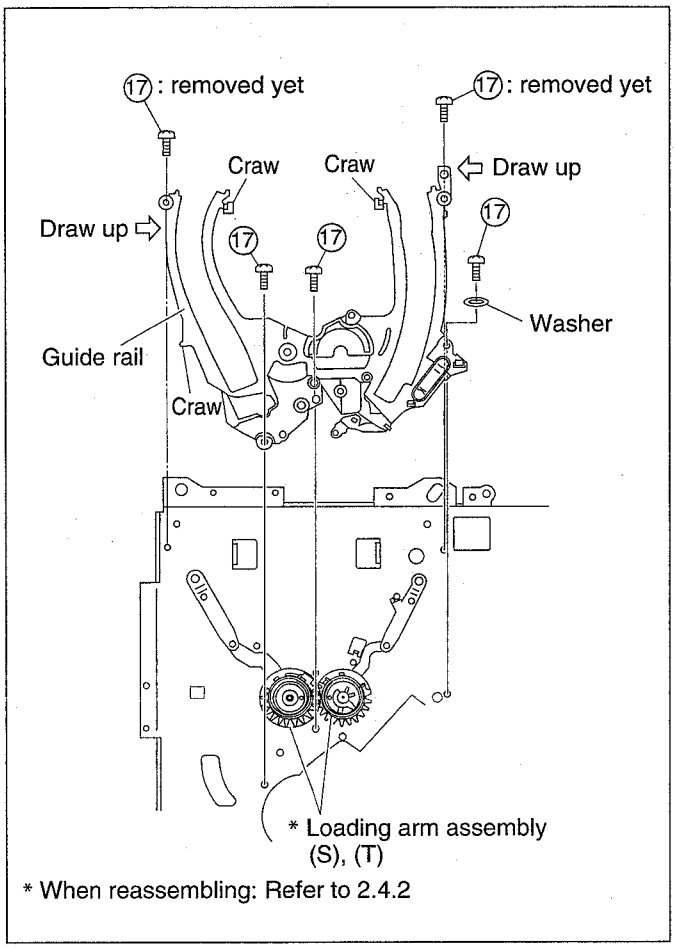


Fig. 2-3-26 (3)

② How to reassemble

(1) Reassemble in the reverse order of removing.
When mounting the Guide rails, draw them up to the drum assembly. (See Fig. 2-3-26(3).)
(2) When mounting the loading arm assembly and control plate, set the phases of each part appropriately by referring to the "How to mount the main parts". (Refer to Chapter 2.4.1 and 2.4.5.)
(3) After replacing the parts, clean the pole base assemblies (S), (T), and check the following adjustments:
- FM waveform linearity check/adjustment. (Refer to Chapter 2.5.1)
- Tape transport check/adjustment. (Refer to Chapter 2.5.7.)

2.3.27 Pulley assembly

① How to remove

(1) Remove the clutch units (S), (T), control plate and reel disks (S), (T). (Refer to Chapter 2.3.11.)
(2) Remove the idler assembly. (Refer to Chapter 2.3.16.)
(3) Remove the pole base assembly and guide rail. (Refer to Chapter 2.3.19 and 2.3.26.)
(4) Remove the screw ⑰ and remove the idler lever.

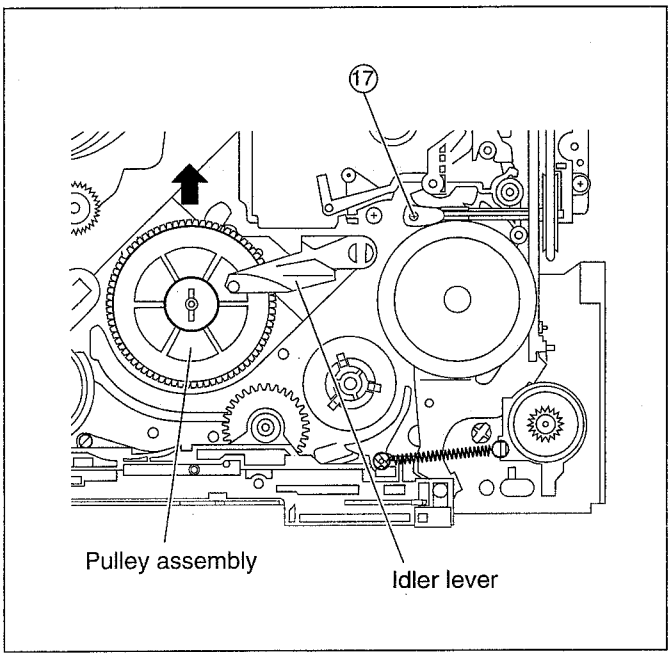


Fig. 2-3-27

(5) Remove the belt (capstan) from the pulley assembly. (Refer to Fig. 2-3-15.)
(6) Take out the pulley assembly.

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) When mounting the guide rail and control plate, set the phases of each part appropriately by referring to the "How to mount the main parts". (Refer to Chapter 2.4.2 and 2.4.5.)

2.3.28 Worm gear assembly

① How to remove

(1) Remove the control plate. (Refer to Chapter 2.3.11.)
(2) Remove the control cam. (Refer to Chapter 2.3.23.)
(3) Remove the guide arm assembly. (Refer to Chapter 2.3.21.)
(4) Remove the pinch roller arm assembly. (Refer to Chapter 2.3.7.)
(5) While releasing the craws, remove the pinch plate.

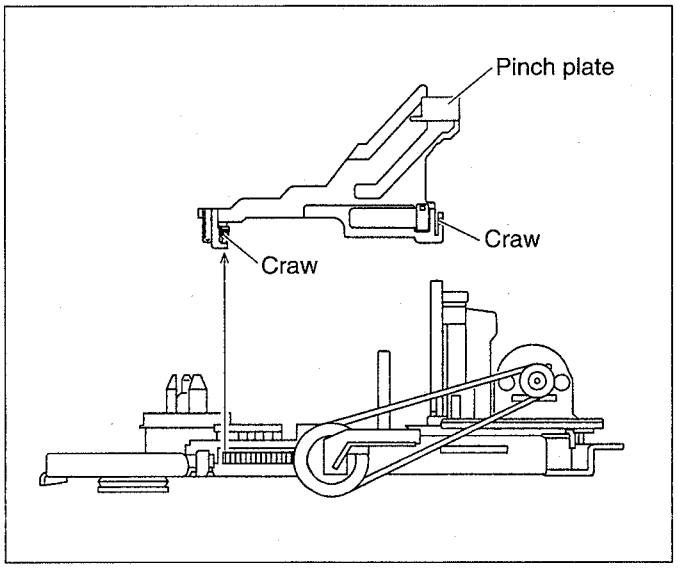


Fig. 2-3-28 (1)

(6) Remove the worm gear assembly by lifting the right side of the worm gear assembly.

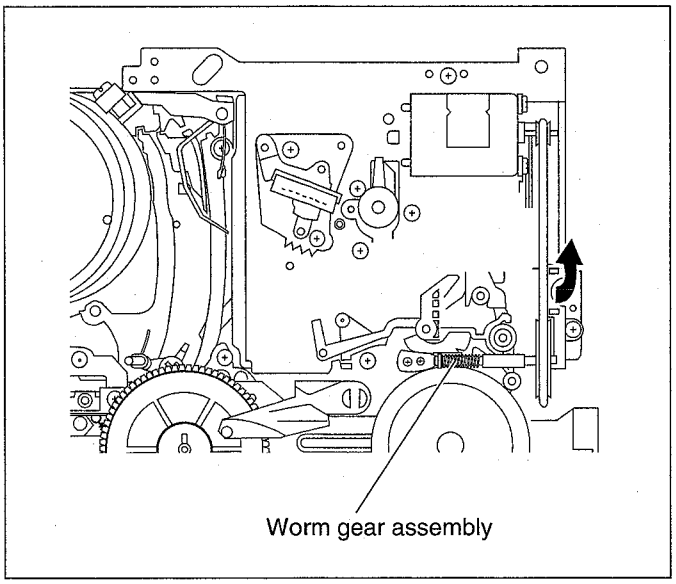


Fig. 2-3-28 (2)

② How to reassemble

(1) Reassemble in the reverse order of removing.
(2) When mounting the control plate and control cam, set the phases of each part appropriately by referring to the "How to mount the main parts". (Refer to Chapter 2.4.3 and 2.4.5.)

2.4 HOW TO MOUNT THE MAIN PARTS (Mechanism Phase Adjustment)

2.4.1 Before parts assembling

The mechanism used in this unit has a close relationship between the rotary encoder and the mechanism control circuit. Therefore, the relationship between the rotary encoder and the control cam determines all the operations of the mechanism parts including the slide plate, loading arm assembly, control plate and brake. If these parts are no mounted at the correct positions, loading/unloading operation will not be performed. Mounting the main parts (mechanism phase adjustment) must be performed at the mechanism assembly position in the same way as in the previous chapter.

2.4.2 Loading arm assembly (S), (T)

(1) Mount the loading arm assembly (S) and the loading arm assembly (T) so that the positioning marks on both gears come face to face with each other.
(2) After mounting the guide rail and setting the pole base assembly at the tip of the arm, perform the unloading operation so that the pole base assembly returns to the forefront position.
(3) Mount the peripheral parts around the guide rail. (Refer to Chapter 2.3.26.)

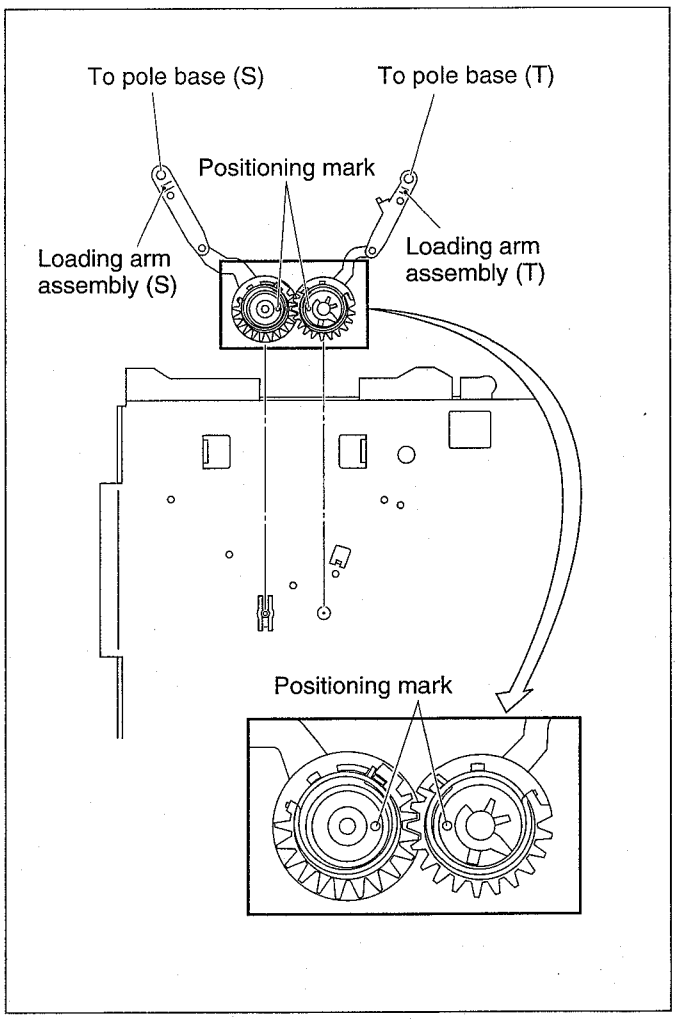


Fig. 2-4-1

2.4.3 Rotary encoder, Change lever, Control cam

(1) When mounting the rotary encoder, apply the triangular positioning marks of the rotary encoder to those on the mounting shaft, and insert it until the catches are locked.
(2) When mounting the change lever, set it so that the positioning holes of the change lever are matched with those on the main deck.
(3) When mounting the control cam, while releasing the capstan brake assembly by the arrow, set it so that the positioning holes of the control cam are matched with those on the main deck.

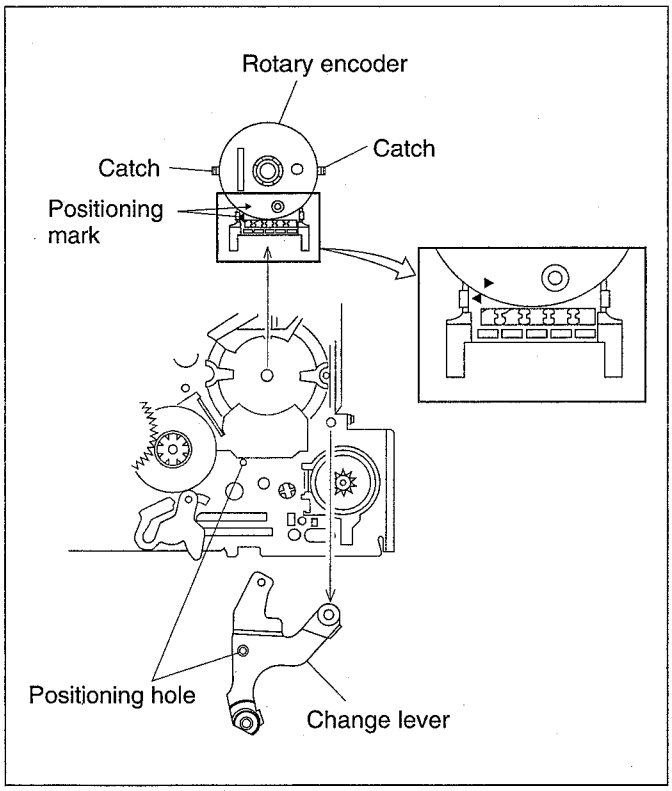


Fig. 2-4-2

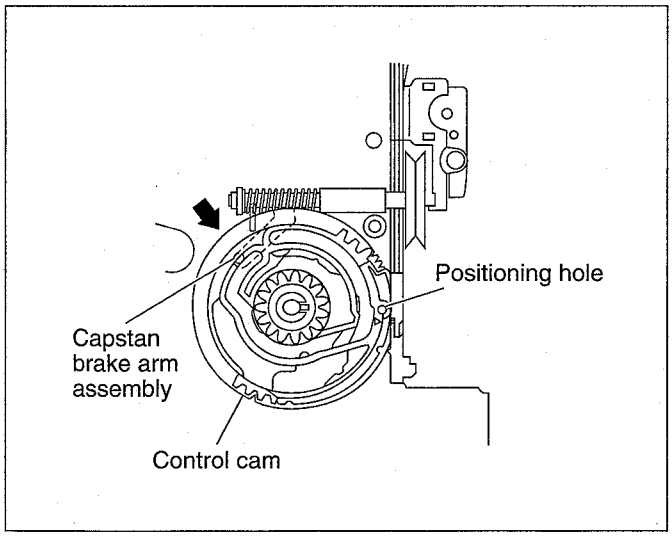


Fig. 2-4-3

2.4.4 Slide plate

(1) Lower the main brake assemblies (S), (T) until they reach to the limit and slide the change arm assembly by the arrow, mount them so that the positioning holes of the slide plate match the holes on the main deck assembly.

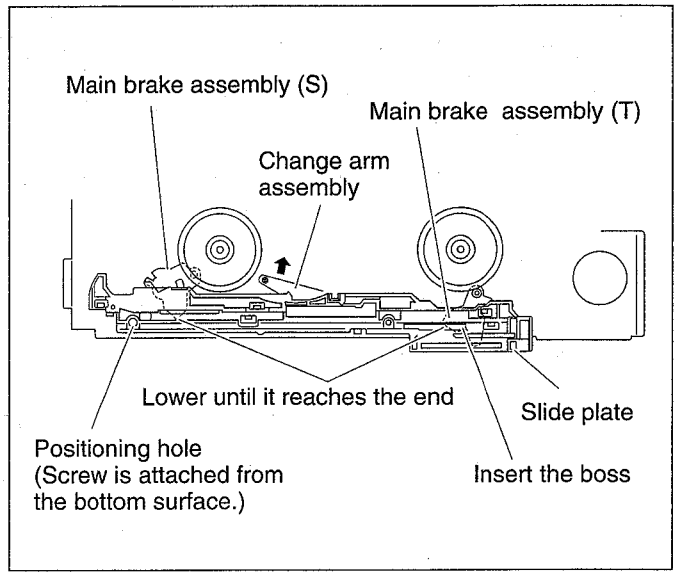

Main brake assembly (S)
Main brake assembly (T)
Change arm assembly
Lower until it reaches the end
Slide plate
Positioning hole (Screw is attached from the bottom surface.)
Insert the boss

Fig. 2-4-4

2.4.5 Control plate

(1) Mount the control plate so that the two positioning holes of the control plate match the holes on the main deck assembly and the positioning holes of the take-up lever.
(2) After mounting the control plate, secure it with the slit washer and the control bracket.

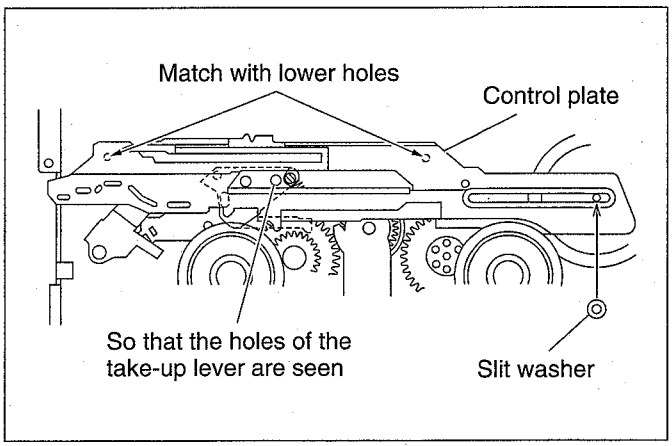


Fig. 2-4-5

2.5 INTERCHANGEABILITY ADJUSTMENT

Notes:
- **The Interchangeability adjustment is very important. After replacing the A/C head assembly, drum assembly or tape transport parts, the Interchangeability adjustment must be performed.**
- **In the Interchangeability adjustment, prepare an extra cassette tape (for recording/playback) so as not to damage the alignment tape, and perform the tape running test as a first step. (Refer to Chapter 2.5.7)**
- **Set the slope of the oscilloscope to ⊖ when playing back the MHP tape and set it to ⊕ when playing back the MHP-L tape.**

2.5.1 FM waveform linearity check/adjustment

(1) Connect the oscilloscope to TP6 (PB FM) on the PRE/REC board assembly and connect the external sync output to TP11 (D. FF) on the PRE/REC board assembly.
(2) Play back the alignment tape MHP to observe the FM waveform.
(3) During playback, press the tracking buttons (+, –) simultaneously to enter the tracking center position.
(4) By adjusting the tracking, check that there is no apparent level drop in the FM waveform and that the waveform varies totally in parallel and with linearity. If required, perform the following adjustments. (Fig. 2-5-1)
(5) Using the hexagonal wrench (1.25 mm), lightly release the set screw at the bottom of the pole base assembly. (Pay attention not to release too much.) (Fig. 2-5-2)
(6) During playback, press the tracking button (+, –) to reduce the FM waveform. If a drop in level is observed at the left-hand side as shown in Fig. 2-5-3, adjust the guide roller on the pole base assembly (S) using the roller driver (PTU94002) so that a linear FM waveform is obtained. If a drop in level is observed at the right-hand side, rotate the guide roller on the pole base assembly (T) for adjustment. (Fig. 2-5-3)
(7) Play back the MHP-L alignment tape and check that the FM waveform varies totally in parallel and with linearity by adjusting the tracking. If required, fine-adjust the guide rollers on the pole base assemblies (S), (T).
(8) After adjusting, tighten the set screw at the bottom of the pole base assembly, (Pay attention not to tighten excessively.)
(9) After tightening the set screw, play back the alignment tapes MHP. MHP-L to check the FM waveform varies as shown in the optimum waveform changing examples.
(10) When the alignment tape MHP is played back after being ejected and reloaded or soon after the search reverse mode is operated, check that the FM waveform stabilizes within 2 sec. of appearing. If it takes more than 2 sec., check which side (right or left) of the FM waveform is unstable and check the following items.
A drop in level is observed at the left-hand side:
Check the guide roller (S) of the Pole base assembly
A drop in level is observed at the right-hand side:
Check the guide roller (T) of the Pole base assembly, the height of the guide arm assembly, and the tilt of A/C head
(11) Perform the tape transport system. (Refer to Chapter 2.5.7)

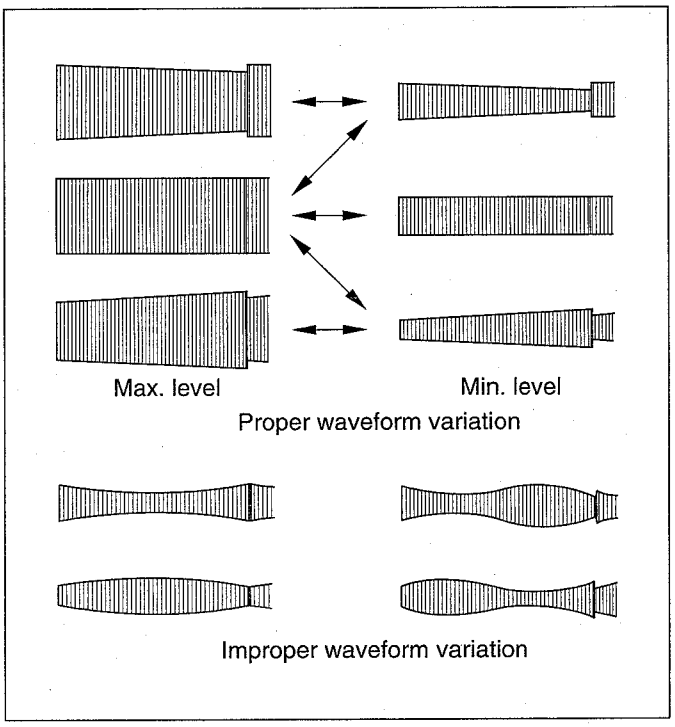


Fig. 2-5-1

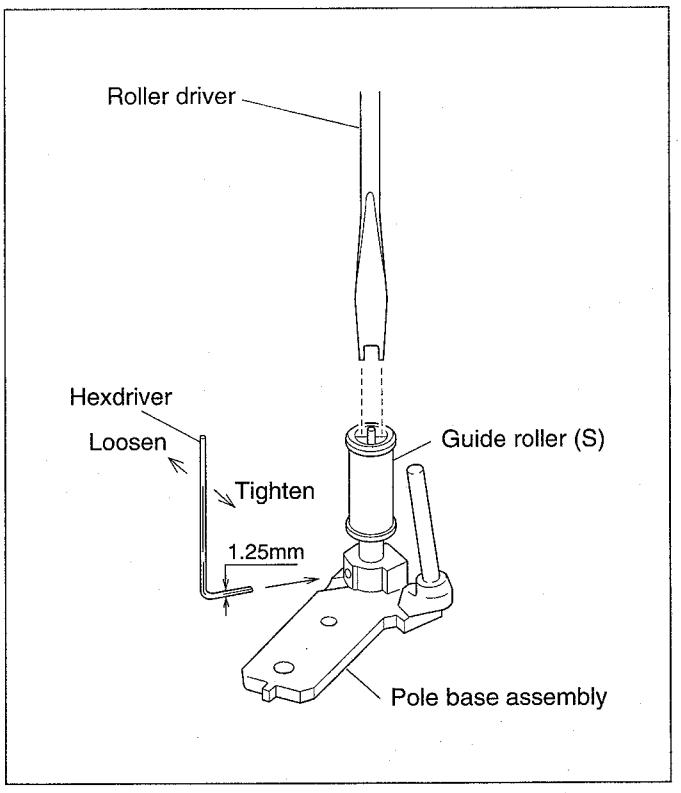


Fig. 2-5-2

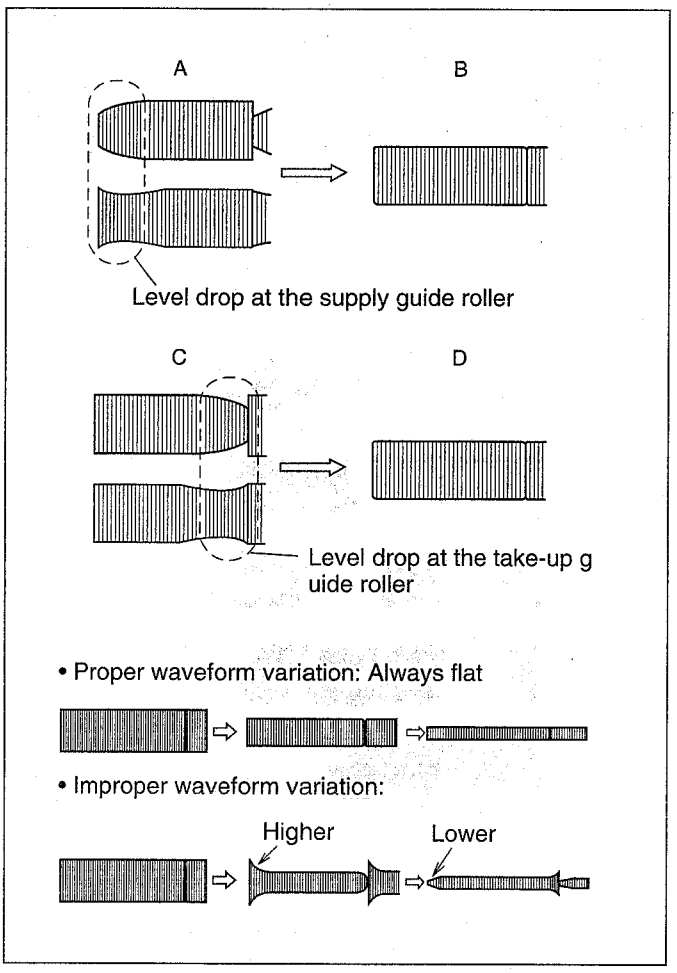


Fig. 2-5-3

2.5.2 A/C head assembly height, Azimuth check/adjustment

Note: • To make adjustment easier, set the A/C head assembly to a temporary height before hand. (Refer to Fig. 2-3-13 (3).)

- Tilt (forward bent) adjustment

(1) Adjust the screw ① with the parallel check plate (PGJ05035) so that the tilt of the A/C head assembly is 0.05 mm.

(2) Confirm that tape is neither damaged nor wrinkled around the lower flange of the guide roller (T). If tape is wrinkled, adjust the tilt of the A/C head between 0 to 0.05 mm. An increase in the tilt of the A/C vertically will result in reduction in wrinkle occurrence on tape. If tape wrinkle occurs even then, carry out a fine adjustment to the height of the guide roller (T). (Refer to Chapter 2.5.7)

- Height and azimuth adjustment

(1) Connect the CH-1 of the oscilloscope to Audio Out terminal and connect the CH-2 to TP401 (CTL P: 5I) on the main PC board, then observe the waveform at both channels with ALT mode.

(2) Play back the MHP alignment tape, and adjust the waveform of Audio Out and control pulse are maximum values by rotating the screws ①, ② and ③ small and equal increments. <Height adjustment>

(3) Then rotate the screw ② to adjust so that both the audio and control pulse waveforms become maximum. <Azimuth adjustment>

(4) Repeat the above steps No. (2) and No. (3) alternately for more precise adjustment.

(5) Confirm that the tilt of the A/C head assembly is 0.05 mm with the parallel check plate. If it is out of specification, repeat all the steps of this section.

(6) Perform the tape transport system. (Refer to Chapter 2.5.7)

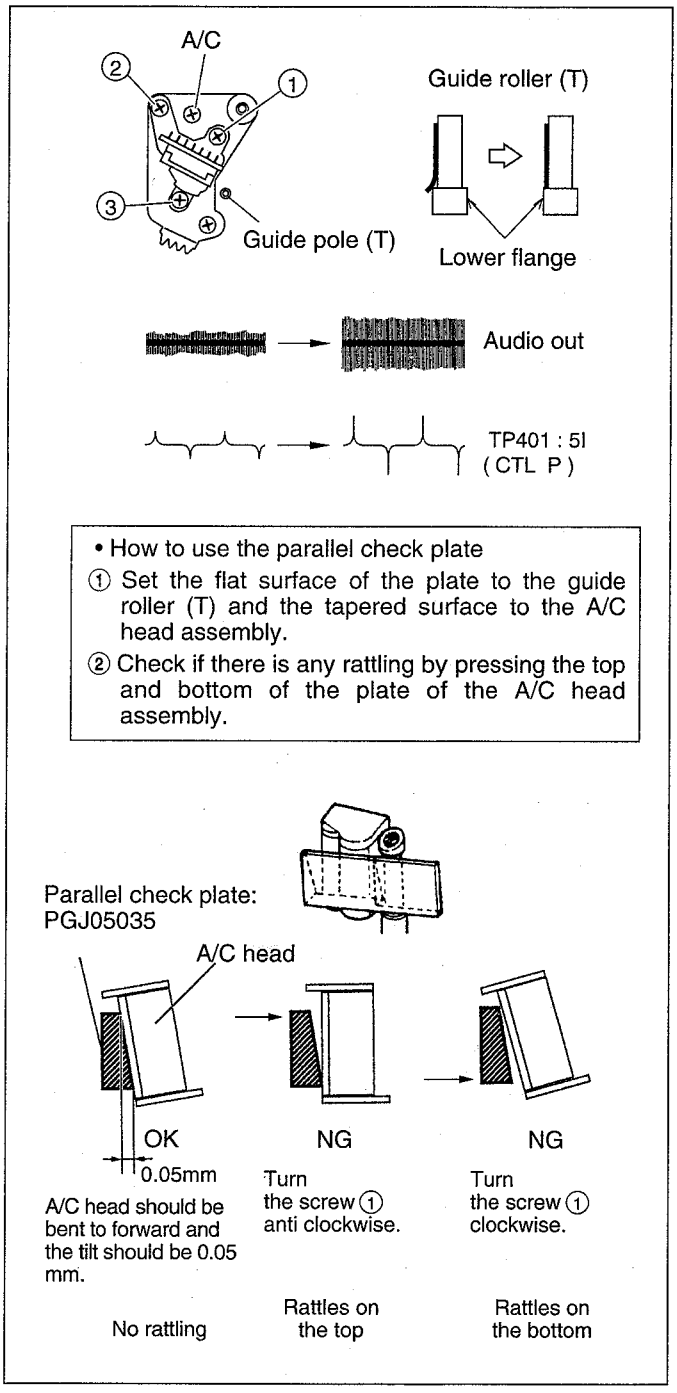

A/C
Guide roller (T)
Guide pole (T)
Lower flange
Audio out
TP401 : 5I
(CTL P)
• How to use the parallel check plate
① Set the flat surface of the plate to the guide roller (T) and the tapered surface to the A/C head assembly.
② Check if there is any rattling by pressing the top and bottom of the plate of the A/C head assembly.
Parallel check plate:
PGJ05035
A/C head
OK
NG
NG
0.05mm
A/C head should be bent to forward and the tilt should be 0.05 mm.
Turn the screw ① anti clockwise.
Turn the screw ① clockwise.
No rattling
Rattles on the top
Rattles on the bottom

Fig. 2-5-4

2.5.3 A/C (Audio Control) head phase (X value) check/ adjustment

(1) Connect the oscilloscope to TP6 (PPB FM) on the PRE/REC board and Audio Out terminal, and connect the external sync to TP11 (D. FF) on the PRE/REC board.
(2) Play back the alignment tape MBP-X to observe the FM waveform and audio signal.
(3) During playback, press the tracking buttons (+, –) simultaneously to enter the tracking center position.
(4) Loosen the screws ④ and ⑤ and set the A/C head position bit (PTU94010) as shown in Fig. 2-5-5.
(5) Rotate the A/C head position bit to adjust the A/C head position so that the FM waveform becomes maximum and the "no-recorded" portion between the FM waveform and the audio signal is within 3 fields.
(6) Play back the alignment tape MHP and observe FM waveform.
(7) During playback, press the tracking buttons (+,–) simultaneously to enter the tracking center position.
(8) By adjusting the tracking, check that the FM waveform becomes maximum at the tracking center position.
(The FM level at the tracking center position should be -1 dB or more against the maximum FM level.)
(9) If the maximum waveform is not obtained, rotate the A/C head position bit to adjust the audio control head position so that the maximum FM waveform is observed first time.
(10) Play back the alignment tape MHP-L and observe FM waveform.

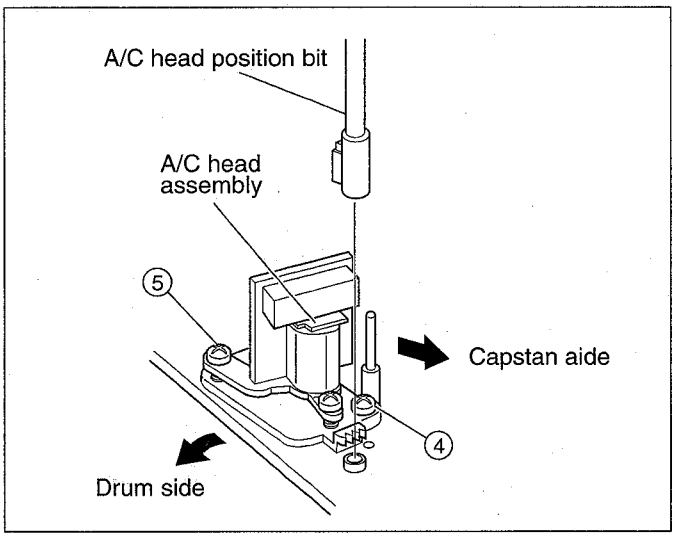
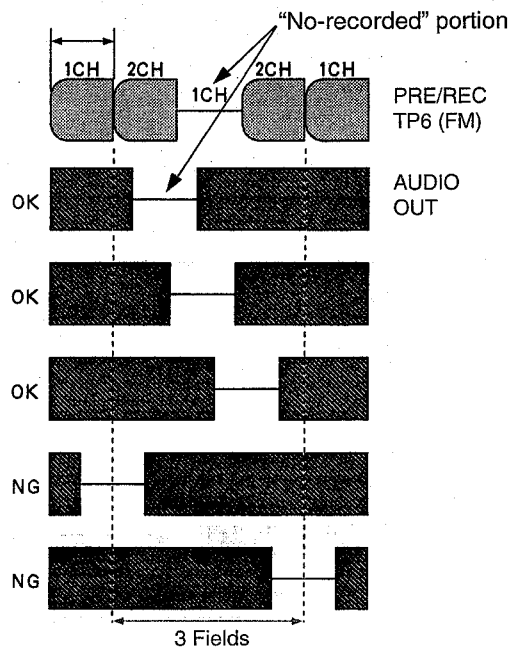


Fig. 2-5-5

(11) During playback, press the tracking buttons (+,–) simultaneously to enter the tracking center position.
(12) By adjusting the tracking, check that the FM waveform becomes maximum at the tracking center position.
(The FM level at the tracking center position should be -2 dB or more against the maximum FM level.)
(13) If the maximum waveform is not obtained, rotate the A/C head position bit to adjust the audio control head position so that the maximum FM waveform is observed first time.
(14) Repeat the above step (6) – (13) to meet specifications of step (8) and (12).
(15) Tighten the screws ④ and ⑤.
(16) Confirm the azimuth of the A/C head. (Refer to Chapter 2.5.2)

The FM waveform becomes maximum and the "no-recorded" portion between the FM waveform and the audio signal is within 3 fields.



• Manner of external synchronization:
① Set the oscilloscope's time sweep to 10 msec.
② In the condition that the oscilloscope is synchronized with D.FF signal, turn the oscilloscope's HOLD OFF control in the direction of (+) to stabilize non-recorded portion.

Fig. 2-5-6

Note: How to convert dB value

When set the maximum FM level to 5.0 scale divisions on the oscilloscope,
more than –1dB: more than 4.5 scale divisions
more than –2dB: more than 4.0 scale divisions

2.5.4 EP auto tracking check

(1) Set to service mode by pressing the STOP, the PAUSE and the MENU buttons simultaneously.
(2) Select the "ADJUST MODE" with pressing the SELECT button and press the SET button. "ADJUST MODE SELECT" menu comes up.
(3) select the "SERVO MODE" with pressing the SELECT button and press the SET button.
(4) When the MHP-L alignment tape is played back, "→" mark appears at the beginning of "EP TRACKING" and the VTR enters the EP TRACKING CHECK mode at the same time.
(5) Press the TRACKING + (SET) and TRACKING – (SELECT) buttons together to "AT OFF" on monitor screen and then, press them one more time to "AT ON". The front panel display "AT" and LP tracking check mode is activated.

(6) If the monitor screen change to "AT OFF" and the front panel undisplay "AT", the X-value is adjusted correctly.
If the cassette tape is ejected, X-value have to be readjusted.
(7) Press the MENU button to quit the LP tracking check mode.

2.5.5 Tension arm position check/adjustment

① Temporary adjustment of mounting position

(1) Rotate the loading motor manually to set to the loading-end position.
(2) Check that the tip of the tension arm comes to the hole "A" on the main deck.
(3) If the tip of the tension arm does not come to the above position (2), loosen the screw ⑥ slightly and rotate the adjustment pin.

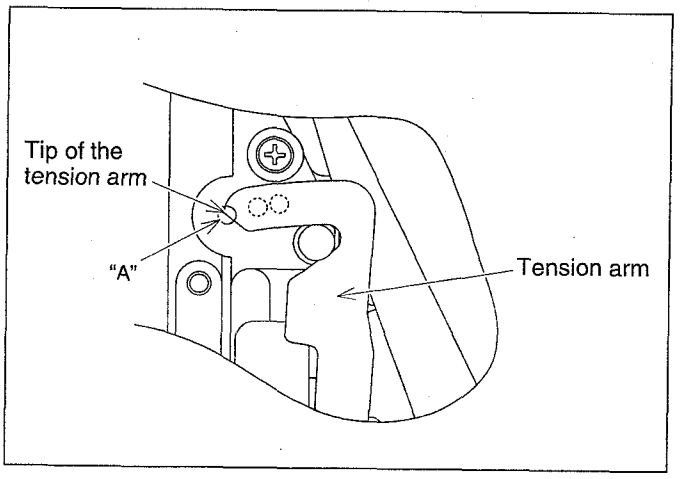


Fig. 2-5-7 (1)

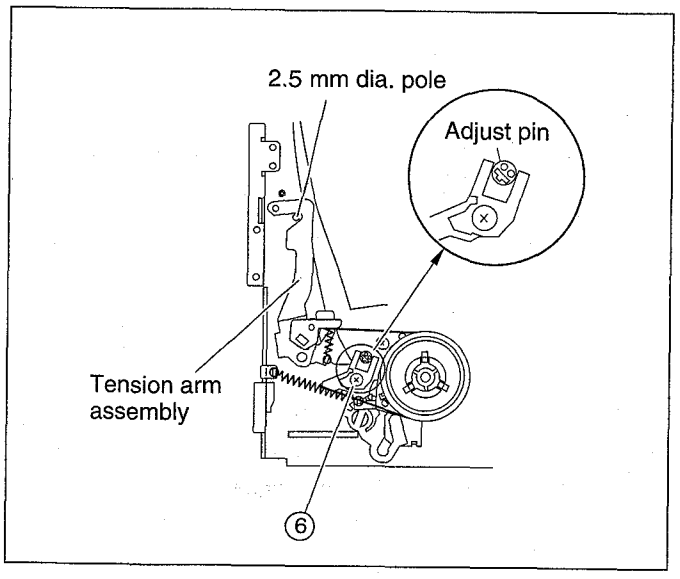


Fig. 2-5-7 (2)

② Back torque check/adjustment

(1) Play back the cassette torque meter PUJ42881, and check that the torque value at the supply (left) side is $3.68 \pm 0.74 \times 10^{-3}$ N·m (indication value: 30 – 45 g·cm).
(2) If the indication is not of the above value, perform adjustments in the following manner:
1) Remove the cassette torque meter.
2) Loosen the screw (6) slightly and rotate the adjustment pin.
(Turn the adjustment pin clockwise to increase the torque, and counterclockwise to decrease it.)
3) Check the above value (1) again, and repeat the adjustments until the specified value is obtained.
4) Perform the tape transport system check.

2.5.6 Take-up torque check

(1) Play back the cassette torque meter (PUJ42881), and check that the torque value at the take-up (right) side is $7.84 \ ^{+1.96}_{-2.94} \times 10^{-3}$ N·m
(indication value: 80 +20/–30 g·cm).
(2) If not meet the specification, replace the clutch unit (T) and confirm this section again.

2.5.7 Tape transport system check/adjustment

Note: • When the tape transport mechanism parts shown in the Fig. below are removed or replaced, the tape transport system check/adjustment must be performed.

① Tape transport system check

(1) Play back the beginning portion of T-120 tape.
(2) Change the playback mode in the following order:
PLAY → SEARCH REV → SEARCH FWD → PLAY
(3) Check that creasing or damage to the tape does not occur at the SP/TU guide rollers (pole base assembly), guide rollers (S, T) or at the guide arm assembly.
(4) Play back the end portion of T-120 tape. Check the above manner (2), (3) again.

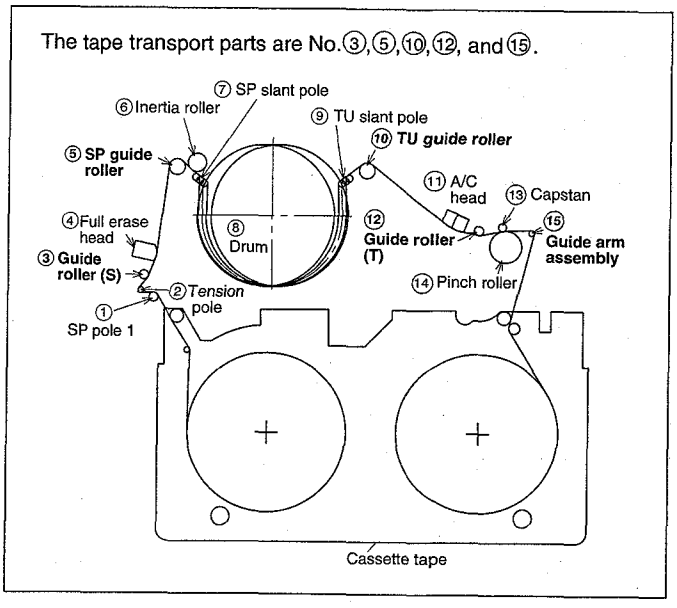


Fig. 2-5-8

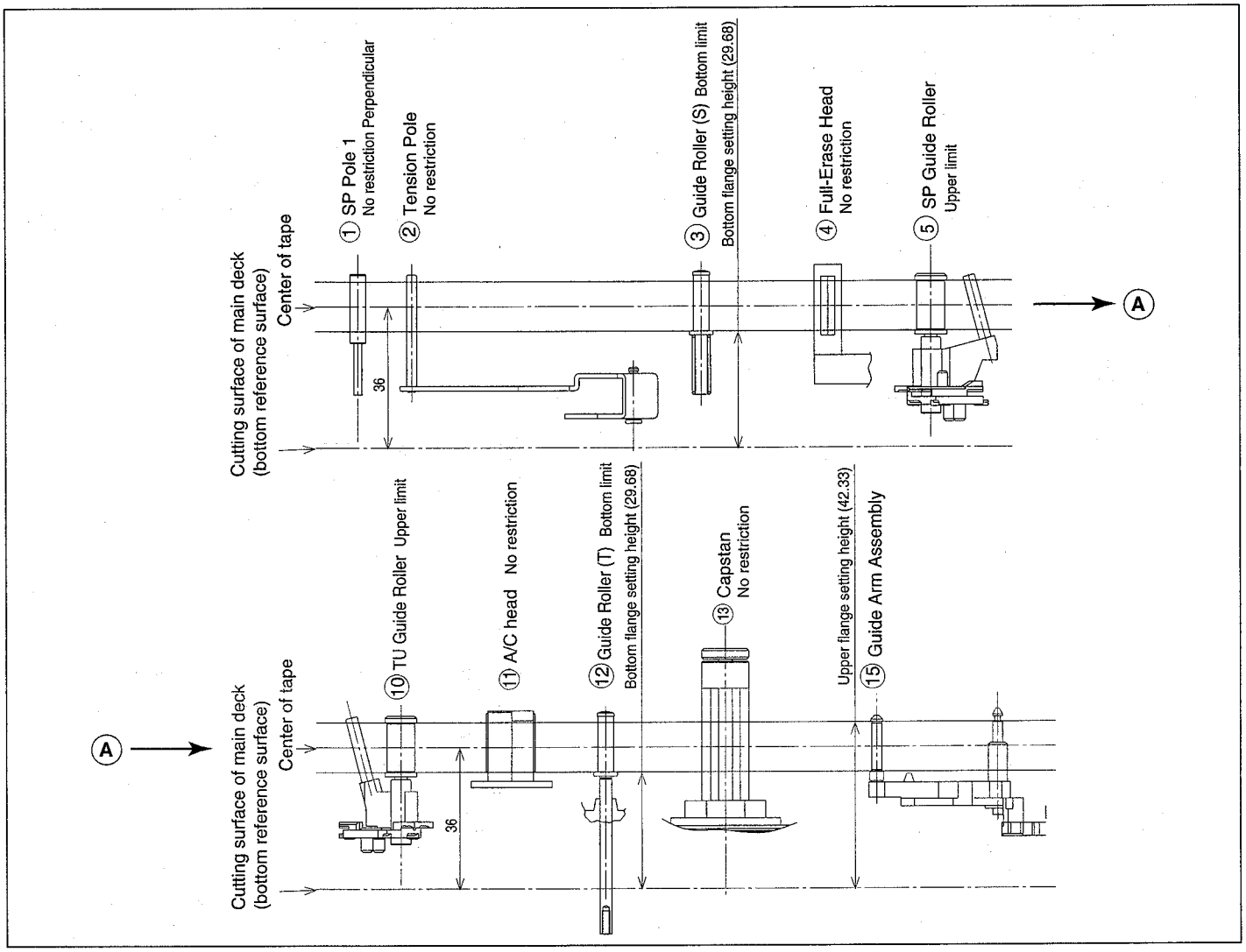


Fig. 2-5-9

② Tape transport system adjustment

(1) Guide roller (S), (T)

(a) If creasing of the tape or other tape damage occurs at the guide roller (S) or (T), rotate the screw (7)/(8) in the tightening direction to lower the height of the guide roller (S)/(T). At this time, be sure not to rotate the screw for more than 1/2 turn.

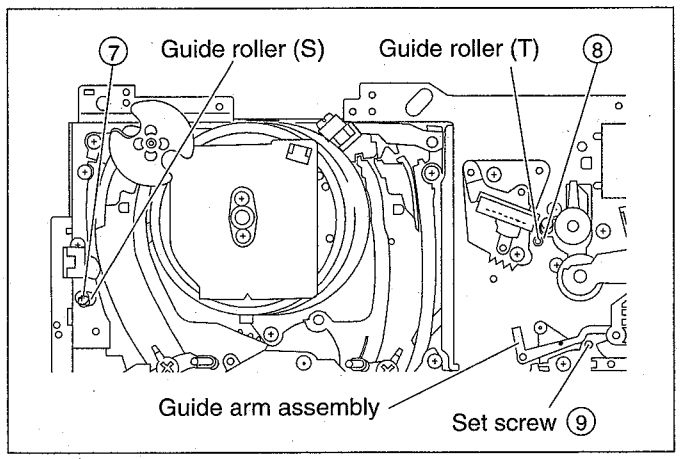


Fig. 2-5-10

To set the reference height of the guide rollers, tighten the screw once until it reaches the end , then rotate it by the following value in the releasing direction.

- Guide roller (S): 2.5 turns
- Guide roller (T): 1.5 turns

(2) Guide arm assembly

(a) If creasing of the tape or other tape damage occurs at the flange on the guide arm assembly, adjust as follows:

(b) Eject the tape.

(c) Rotate the set screw ⑨ clockwise to raise the height of the guide arm assembly. (Refer to Fig. 2-5-10)

(d) Play back the tape, and repeat this procedure until the tape creasing or tape damage does not occur. If tape is twisted between the capstan and the guide arm assembly, fine adjust the height of the guide arm assembly.

(3) When adjusting the tape transport parts, be sure to perform the compatibility adjustment again. (Refer to Chapter 2.5.1, 2.5.2 and 2.5.3.)

SECTION 3
ELECTRICAL ADJUSTMENT

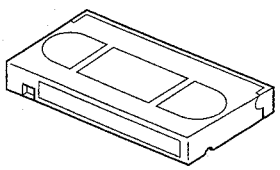
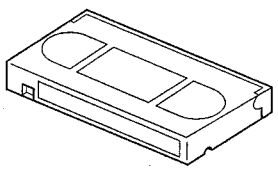
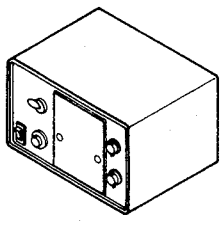
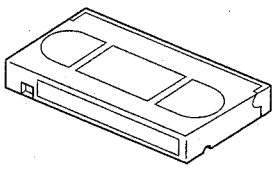
3.1 PRECAUTION

Electrical adjustment are required after replacing circuit components and certain mechanical parts. It is important to perform these adjustments only after all repairs and replacements have been completed. Also do not attempt these adjustments unless the proper equipments is available.

3.1.1 Required test equipment

① Color television or monitor
② Oscilloscope: wide-band,dual-trace,triggered delayed sweep
③ Frequency counter
④ Digital voltmeter
⑤ Signal generator: RF/IF sweep/maker
⑥ Signal generator: NTSC color bars
⑦ Recording tape

3.1.2 Required adjustment tools

Alignment tape (SP stairstep) MHP	Alignment tape (SP color bar) MHV-2
	
Carrier checker PGJ05008	Alignment tape (S-VHS SP/EP color bar) MH-1H
	

3.1.3 About board adress

Consisting of numeral and alphabet following the symbol of a measurement point and a adjustment part indicates a section of the specified board where theirs are located.

3.1.4 Signals required for video system adjustment

● Color bars signal (composite and Y/C)
(color level; 75%, set up 7.5%)

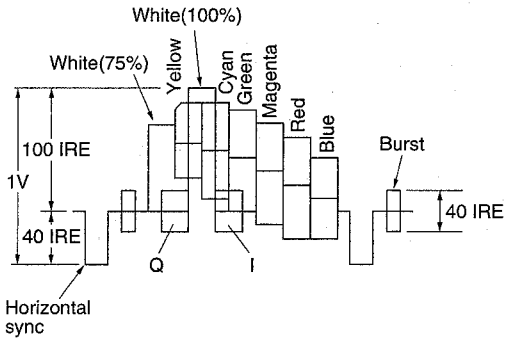


Fig.3-1-1 Color bars signal waveform

● Color bars pattern

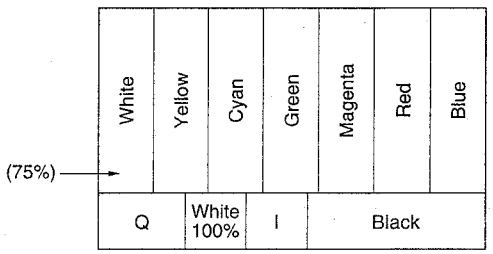
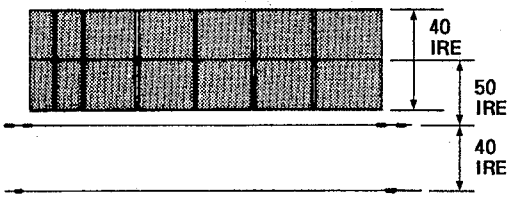
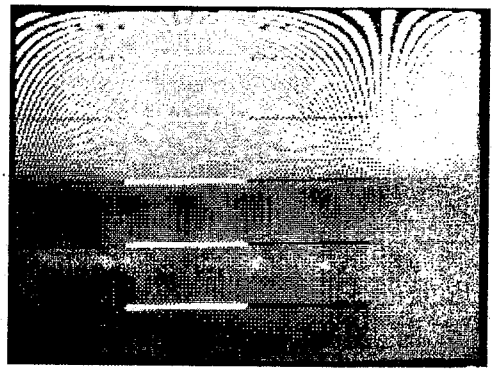


Fig.3-1-2 Color bars pattern

● Video sweep signal (100k - 5MHz)



To be used for frequency response adjustment (VIDEO EQ).
To supply this signal through the LINE IN terminal, make sure to use a sweep signal having a good characteristic in the H correlation in order to avoid erroneous operation of comb filters.
For a reference, a signal having a good H correlation shows such a clear pattern as neighboring black and white lines are the same in the width and the interval on the monitor as shown in the figure below.



3.2 SWITCHING REGULATOR CIRCUIT

Note: • Unless otherwise specified, all measurement points and adjustment parts are located on the MAIN BOARD.

3.2.1 5V DC output voltage

Signal	• Color bar
Mode	• REC : SP
Equipment	• Digital voltmeter
Measurement point	• TP801 (SWD 5V) : 4C
Adjustment part	• VR801 (SWD 5V) : 2C
Specification	• 5.22 ± 0.10V DC

(1) Connect a digital voltmeter to TP801 and GND.
(2) Adjust VR801 for 5.22 ± 0.10V DC.

3.3 SERVO CIRCUIT

Notes: • Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.
• This agjustment use the service mode.Refer to "1.5 Service mode" about detail of the service mode.

3.3.1 PB switching point

Signal	• Alignment tape [MHP],Stairstep
Mode	• PB,Automatic tracking OFF
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
Trigger slope (-)	• TP11(DRUM FF) , [PRE/REC BOARD]
Specification	• 7.5 ± 0.5H

(1) Set to service mode by pressing the **STOP**, the **PAUSE** and the **MENU** buttons simultaneously.
(2) Select the "ADJUST MODE" with pressing the **SELECT** button and press the **SET** button. "ADJUST MODE SELECT" menu comes up.
(3) Select the "SERVO MODE" with pressing the **SELECT** button and press the **SET** button.
(4) Play back the alignment tape MHP, then "→" appears left of the item "SW POOINT ADJ" and enter the auto adjustment mode.
(5) Press the tracking "+" and "–" buttons simultaneously, then starts the adjustment mode automatically and stop the VTR automatically, and then "*" mark appeare at the beginning of "SW POINT ADJ" to infrom finish of the adjustment. If the adjustment fails, the cassette tape is ejected.

Note: Manual adjustment can be carried out with the +, - button besides with the AUTO adjustment. The result of the adjustment is stored in the memory by pressing the STOP button and the "*" mark then appears at the beginning of the "SW POINT ADJ".

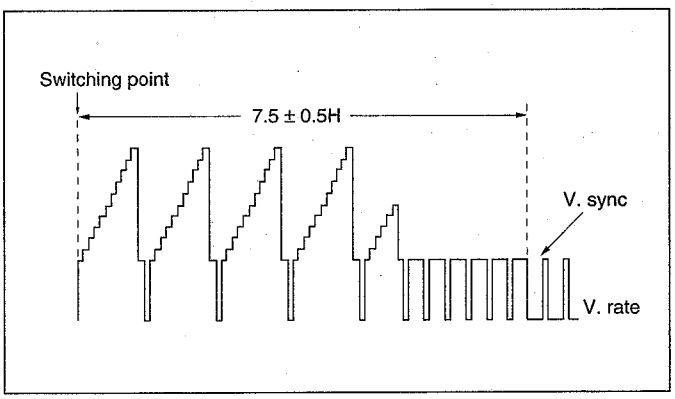


Fig.3-3-1 PB switching point

3.3.2 Slow tracking preset

Signal	• Color bar
Mode	• SP/EP, REC → PB(SLOW) Automatic tracking OFF
Equipment	• TV-Monitor
Specification	• Minimum noise

(1) Set to service mode by pressing the **STOP** , the **PAUSE** and the **MENU** buttons simultaneously.
(2) Select the "ADJUST MODE" with pressing the **SELECT** button and press the **SET** button. "ADJUST MODE SELECT" menu comes up.
(3) Select the "SERVO MODE" with pressing the **SELECT** button and press the **SET** button.
(4) Record a color bar signal in the SP mode.
(5) Playback recorded signal on the FWD slow mode (press the **PAUSE** button more than 2 seconds).
(6) "→" appears left of the item "SP FWD SLOW" and enter the adjustment mode.
(7) Observe the display on the TV monitor and adjust for optimum noise condition (best tracking) by depressing "+" or "–" tracking buttons.
(8) Depress the **STOP** button to record the adjustment value in the memory with indication by "*" mark at the beginning of the corrected item.
(9) Confirm that the bar noise is not visible on the TV monitor in the slow mode.
(10) Repeat steps (5) to (9) in REV slow mode. (Press the PAUSE button more than 2 seconds in REV search mode.)
(11) Repeat steps (4) to (10) in EP mode.
(12) Press the MENU button to quit the service mode.

Note: "*" mark does not disappear untill the main power turns off.

3.4 VIDEO CIRCUIT

Notes:
- **Unless otherwise specified,all measurement point and adjustment parts are located on the MAIN BOARD.**
- **VIDEO circuit adjustments are performed by the EVR system by use of the service mode.**
- **S-INPUT means Y/C separated video signal in the chart.**
- **Set the EDIT SELECT to OFF position.**
- **To select either S-VHS or VHS mode automatically, set the menu switch No. 100 S-VHS SELECT to AUTO (1) and insert a cassette tape.**

• How to setting the EVR adjustment

(1) Set to service mode by pressing the **STOP**, the **PAUSE** and the **MENU** buttons simultaneously.
(2) Select the "ADJUST MODE SELECT" menu comes up.
(3) Select the "EVR MODE" with pressing the **SELECT** button and press the **SET** button more than 2 seconds.
(4) Set the "EVR No." with pressing the **C.RESET** button.

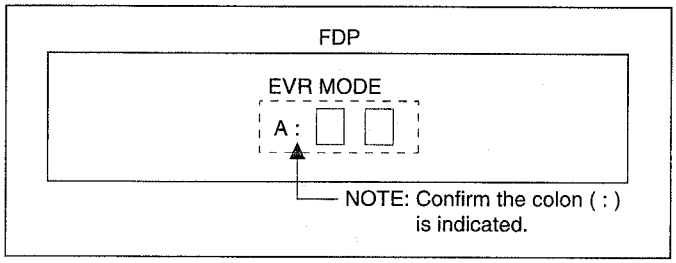


Fig.3-4-1 EVR mode

3.4.1 AGC Y level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
EVR mode	• A : 11
Specification	• 1.00 ± 0.03Vp-p (terminated)

(1) Connect an oscilloscope to VIDEO OUT TERMINAL.
(2) Adjust **SET** or **SELECT** button for 1.00 ± 0.03 Vp-p.
(3) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized in video unit IC6.

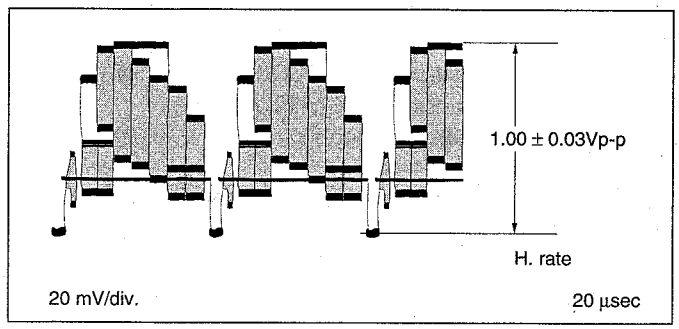


Fig. 3-4-2 AGC Y level

3.4.2 White/dark clip (S-VHS/VHS)

Signal	• Color bar
Mode	• EE • S-VHS/VHS
Equipment	• Oscilloscope
Measurement point	• TP201 (W/D CLIP) : 22D
EVR mode	• A : 14
Specification	• WHITE CLIP : 110% ± 4%(S-VHS) 90% ± 4%(VHS) DARK CLIP : 70% ± 8%(S-VHS) 45% ± 8%(VHS)

(1) Connect an oscilloscope to TP201.
(2) Adjust **SET** or **SELECT** button for 110 ± 4%(S-VHS), 90 ± 4%(VHS) white clip and 70 ± 8%(S-VHS), 45 ± 8%(VHS) dark clip as shown in Fig.3-4-3.
(3) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized.

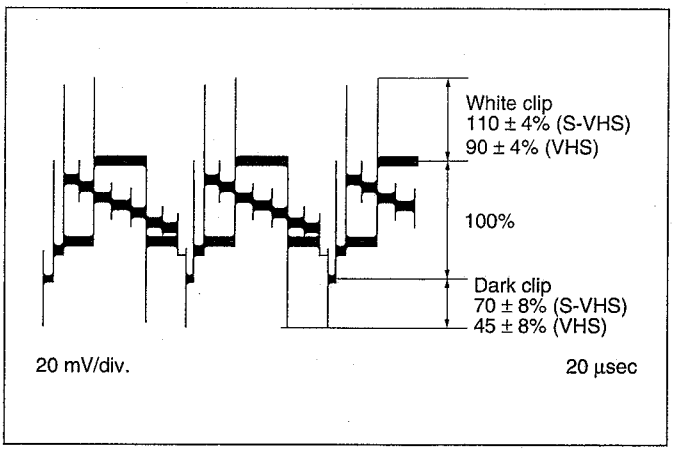


Fig.3-4-3 White/dark clip

3.4.3 Sub emphasis input level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP202 (SUB EMPHASIS) : 21B
EVR mode	• A : 15
Specification	•400 ± 20 mVp-p

(1) Connect an oscilloscope to TP202.
(2) Adjust **SET** or **SELECT** button of the remote controller for 400 ± 20 mVp-p.
(3) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized.

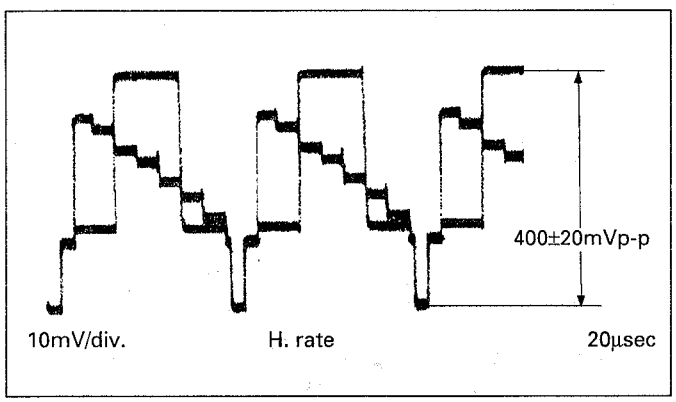


Fig. 3-4-4 Sub emphasis input level

3.4.4 Carrier/deviation (S-VHS/VHS)

Signal	• Color bar • S-VHS/VHS
Mode	• EE
Equipment	• Oscilloscope
Measurement point	• CN202 pin 3 : 21E
Adjustment tool	• Carrier checker
EVR mode	• A : 13 (deviation) • A : 12 (carrier)
Specification	•Carrier :5.4MHz±30KHz (S-VHS) :3.45MHz±30KHz (VHS) •Deviation :1.6MHz±30KHz (S-VHS) :1.0MHz±30KHz (VHS)

(1) Connect the carrier checker to CN202 pin 3 and its output to the oscilloscope.
(2) In the S-VHS mode, adjust **SET** or **SELECT** button to accord the sync tip with the "LOWER" marker and to accord the 100% white with the "UPPER" marker.
(3) In the VHS mode, adjust the gain control of the oscilloscope to set between the "LOWER" marker and the "UPPER" marker for 4.0 scale divisions. Adjust **SET** or **SELECT** button to be difference 0.2 scale between the sync tip and the "LOWER" marker and to be difference 0.2 scale between the 100% white and the "UPPER" marker.
(4) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized.

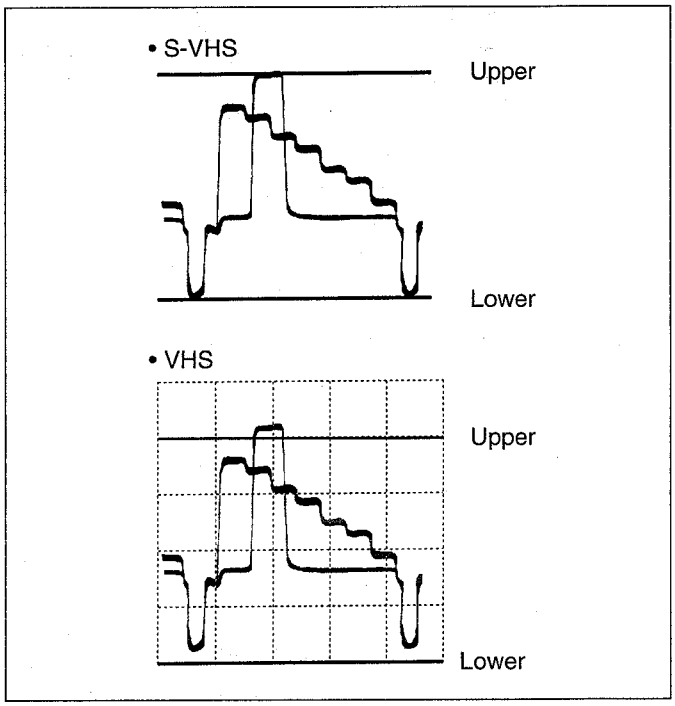


Fig. 3-4-5 Carrier/Deviation

3.4.5 PB Y level (S-VHS/VHS)

Signal	• Color bar • S INPUT
Mode	• REC → PB : SP • S-VHS / VHS
Equipment	• Oscilloscope
Measurement point	• VIDEO OUT TERMINAL
EVR mode	• A : 11
Specification	•1.00 ± 0.03Vp-p (terminated)

(1) Connect an oscilloscope to VIDEO OUT TERMINAL.
(2) Record a color bar signal in S-VHS(VHS) mode.
(3) Adjust **SET** or **SELECT** button for 1.00 ± 0.03Vp-p as shown in Fig.3-4-6.
(4) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized.

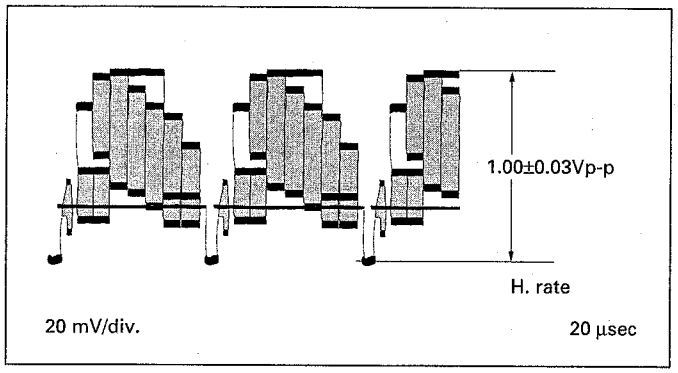


Fig.3-4-6 PB Y level

3.4.6 SP/EP REC color level

Signal	• Alignment tape [MH-1H]Color bar
Mode	• PB (SP/EP) • REC → PB : SP/EP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP203 (PB color out) : 22I
Trigger slope (–)	• TP11 (DRUM FF) [PRE/REC board]
EVR mode	• A : 2
Specification	• "A" x 130% ± 5% : SP • "B" x 100% ± 5% : EP

(1) Playback the SP (EP) color bar signal of MH-1H alignment tape.
(2) Make a note of the higher color level "A(B)".
(3) Press the **STOP** button and eject the MH-1H alignment tape.
(4) Set EVR mode A:2.
(5) Record a color bar signal in SP (EP) mode, and playback recorded color bar signal.
(6) Before recording, adjust **SET** or **SELECT** button so that the higher level channel becomes 130 ± 5% : SP (100 ± 5% : EP) of the note "A(B)" level during playback as shown in Fig. 3-4-8.
(7) Set normal VCR mode by pressing **MENU** button so adjustment data is memorized.

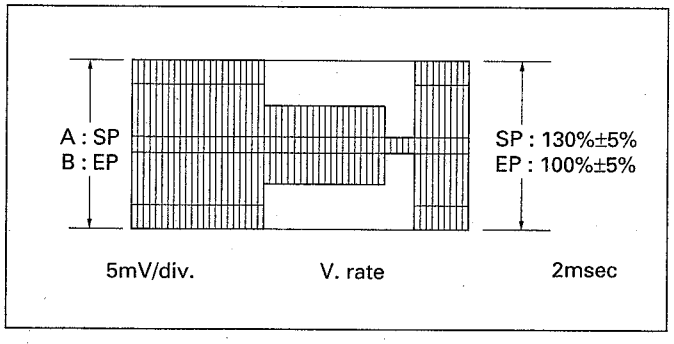


Fig. 3-4-7 REC color level

3.4.7 S-VHS VIDEO EQ

Signal	• S INPUT • Video sweep
Mode	• REC → PB : SP/EP • S-VHS • EDIT SELECT REC : OFF PB : DUB
Equipment	• Oscilloscope
Measurement point	• Y OUT TERMINAL
Adjustment prat	• R113 (S-SP VIDEO EQ) : [PRE/REC board] • R114 (S-EP VIDEO EQ) : [PRE/REC board]
Specification	• 3.2 ± 0.2 scale R113 : SP • 2.8 ± 0.2 scale R114 : EP

(1) Connect an oscilloscope to Y OUT TERMINAL.
(2) Record a video sweep signal in S-VHS SP mode, then play it back.
(3) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R113 so that 3.58 MHz marker level becomes 3.2 ± 0.2 scale divisions.
(4) Record a video sweep signal in S-VHS EP mode, then play it back.
(5) If the sweeper's 100 kHz marker frequency is for 4 scale divisions on the oscilloscope screen, adjust R114 so that 3.58 MHz marker level becomes 2.8 ± 0.2 scale divisions.

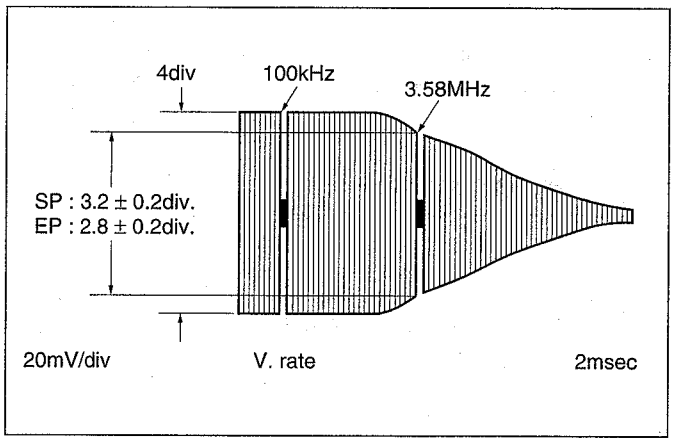


Fig. 3-4-8 S-VHS VIDEO EQ

Alternate method

(1) Record a color bar signal in S-VHS SP mode,
(2) Play it back to observe the picture and adjust R113 for best resolution, without losing S/N ratio.
(3) So after adjustment, confirm black or white spot.
(4) Record a color bar signal in S-VHS EP mode.
(5) Play it back to observe the picture and adjust R114 for best resolution, without losing S/N ratio.
(6) So after adjustment, confirm black or white spot.

3.4.8 AFC CLOCK

Note: For the following adjustments, use 1 : 1 probe with input capacitance less than 100 pF.

Signal	• No signal
Mode	• EE • AUX
Equipment	• Frequency counter
Measurement point	• TP301 : 16M
Adjustment part	• VR301 (fH) : 17M
Specification	• 15.73 ± 0.10 kHz

(1) Connect the frequency counter to TP301 and GND.
(2) Adjust VR301 for 15.73 ± 0.10 kHz.

3.5 PRE/REC CIRCUIT

3.5.1 REC FM level

Note: The R12, REC FM level is not necessary to be readjusted for any cases servicing.
If it is turned accidentally or IC1 need to be replaced for some reason, whole PRE/REC board have to be replaced.

3.6 AUDIO CIRCUIT

Note: Unless otherwise specified, all measurement point and adjustment parts are located on the PRE/REC BOARD.

3.6.1 Audio REC FM level

Signal	• VIDEO : Color bar • Audio : No signal
Mode	• REC → PB : EP • S-VHS
Equipment	• Oscilloscope
Measurement point	• TP53 (A. PB FM)
Trigger slope (–)	• TP11 (DRUM FF)
Adjustment part	• R216 (A. REC FM LEVEL)
Specification	• 90 ± 10 mVp-p

(1) Connect an oscilloscope to TP53.
(2) Record a color bar signal without an audio signal in S-VHS EP mode then playback.
(3) Adjust R216 for 90 mVp-p playback level of higher channel level before recording.
(4) Confirm that the lower channel level is more than 60 mVp-p.

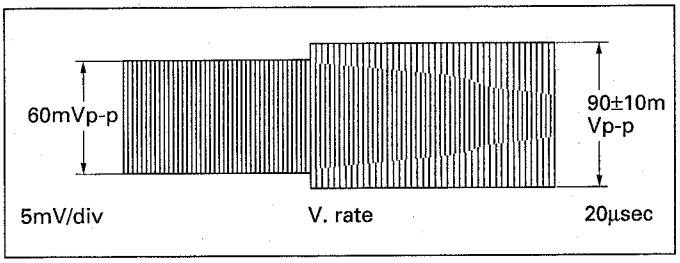


Fig. 3-6-1 Audio REC FM level

3.6.2 Audio EE level

Signal	• 1kHz, –8dBs
Mode	• EE • Audio out select : HiFi L+R
Equipment	—
Measurement point	• Sound level meter (Front panel)
Adjustment part	• VR1(A LEV ADJ (L)) [MAIN board] : 6M • VR2(A LEV ADJ (R)) [MAIN board] : 7M
Specification	• 0 dB

(1) Set the HiFi REC level VR to center click position.
(2) Adjust VR1 and VR2 so that the sound level meter shows 0dB.

3.7 Y/C SEP CIRCUIT

Note: Unless otherwise specified, all measurement point and adjustment parts are located on the Y/C SEP BOARD.

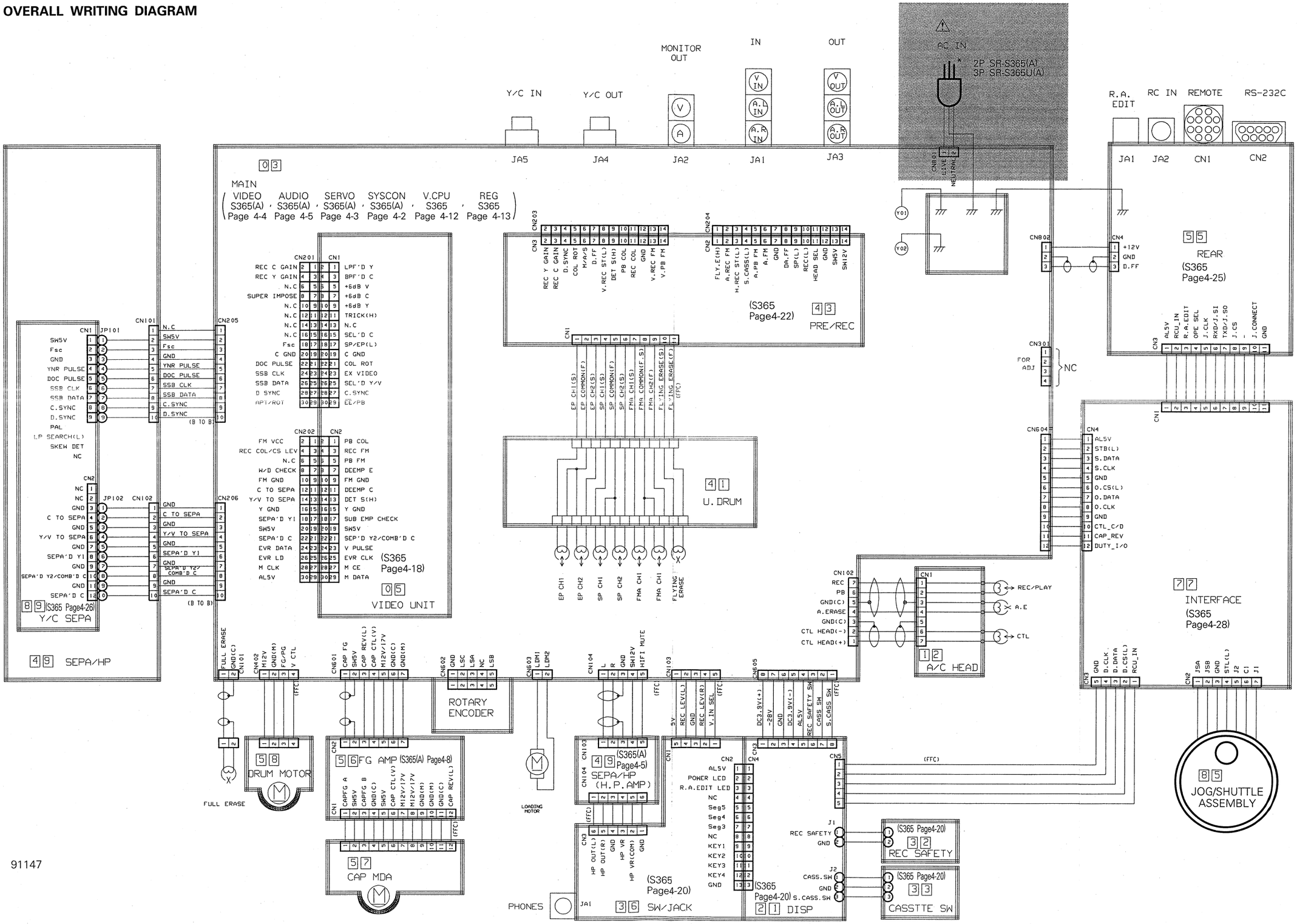
3.7.1 Digital I/O level

Signal	• Color bar
Mode	• EE • S-VHS
Equipment	• Oscilloscope
Measurement point	• CN206 - pin4 (Y/V To SEP) • CN206 - pin6 (SEPAD Y1) [MAIN board]
Adjustment part	• R68 (DIGITAL I/O LEVEL) : 5B
Specification	• Equal level

(1) Remove the SEP/HP board from chassis and tip the Y/C SEP board together SEP/HP board.
(2) Connect the channel (CH-1) of a dual trace oscilloscope to CN206 - pin4 and the other channel (CH-2) to CN206 - pin6 on the MAIN board.
(3) Set the oscilloscope for DUAL mode, and overlap the waveform.
(4) Adjust R68 for equal Y levels.

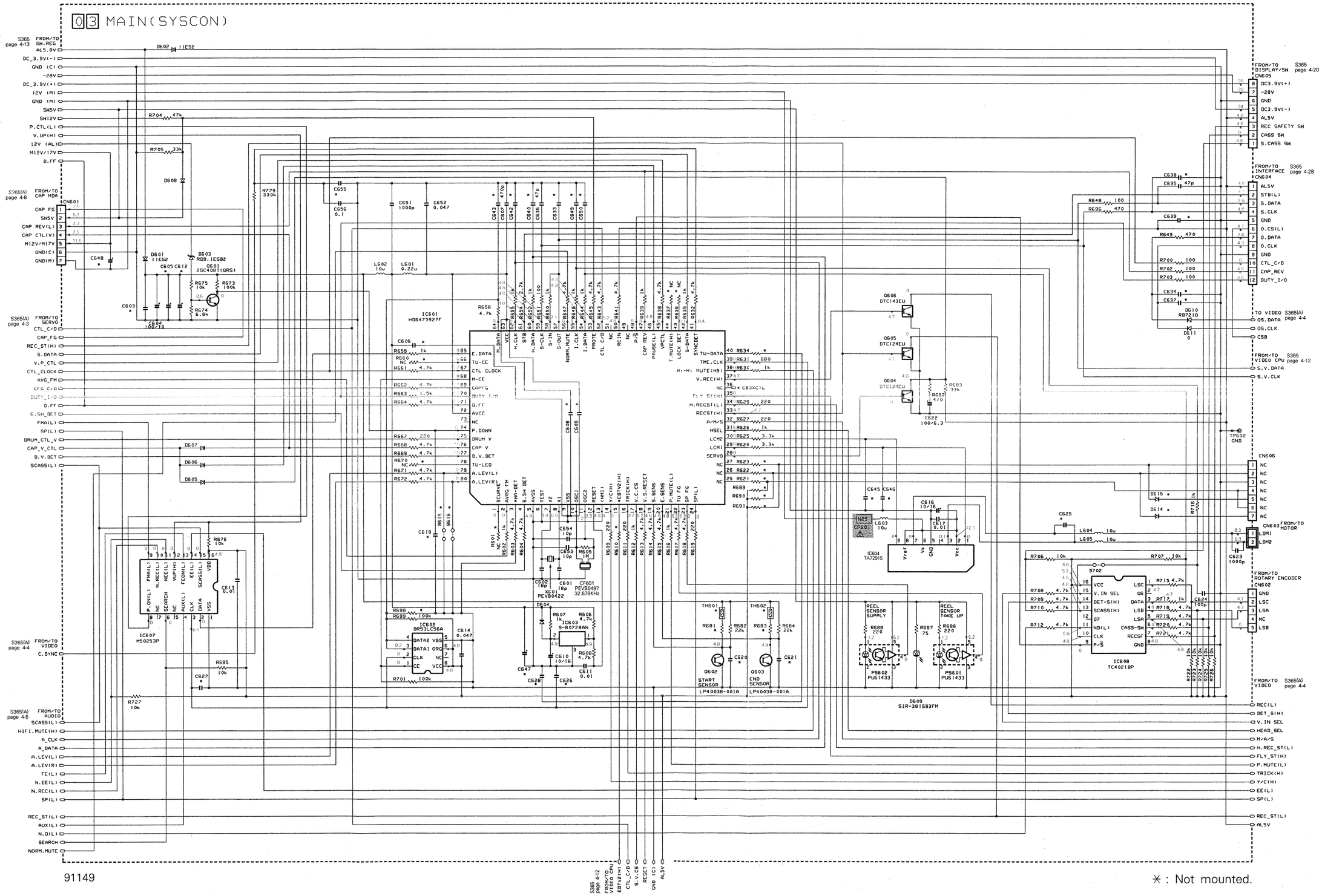
SECTION 4
CHARTS AND DIAGRAM

4.1 OVERALL WRITING DIAGRAM



91147

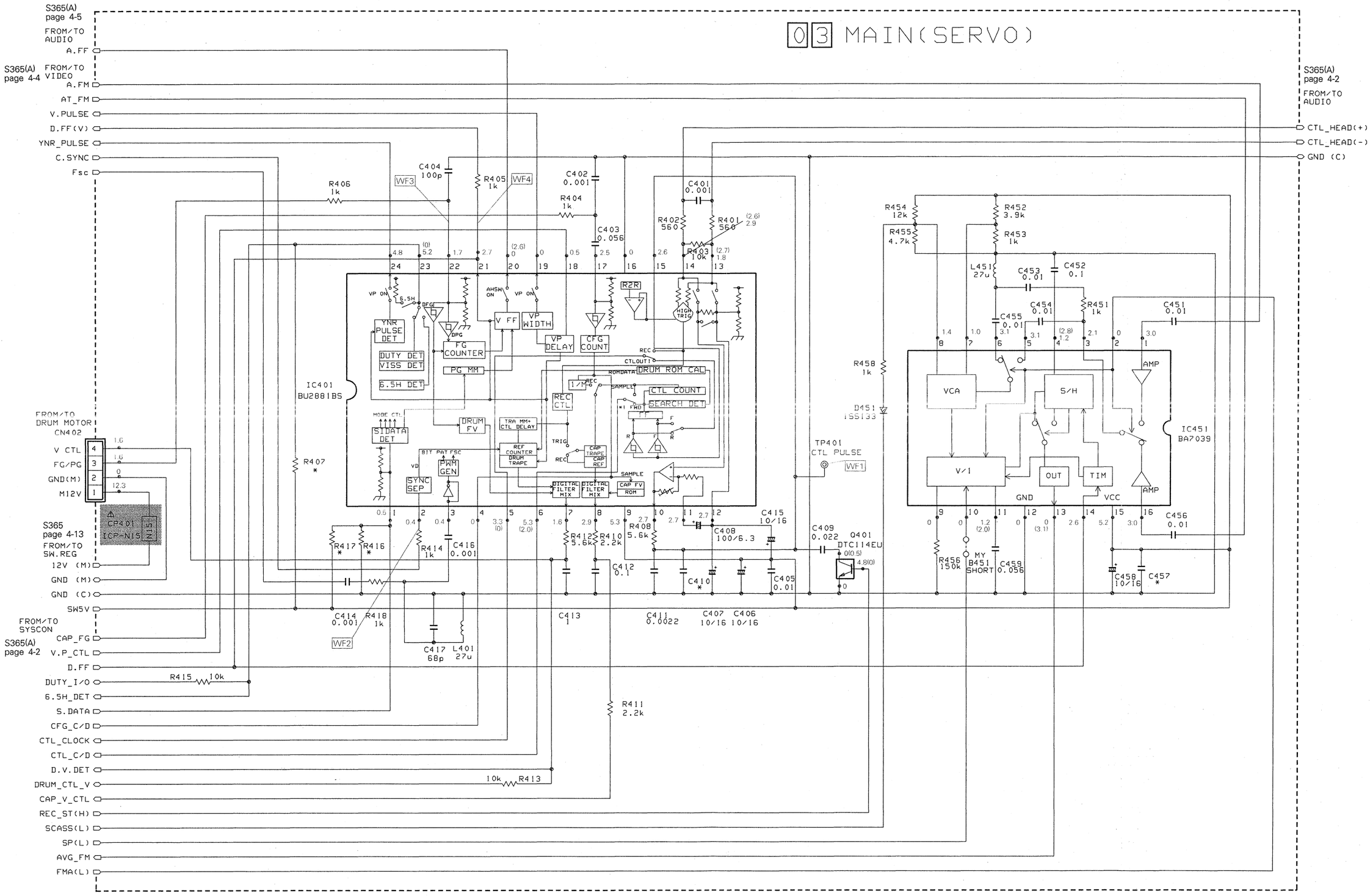
4.2 MAIN(SYSCON) CIRCUIT BOARD SCHEMATIC DIAGRAM



91149

✳ : Not mounted.

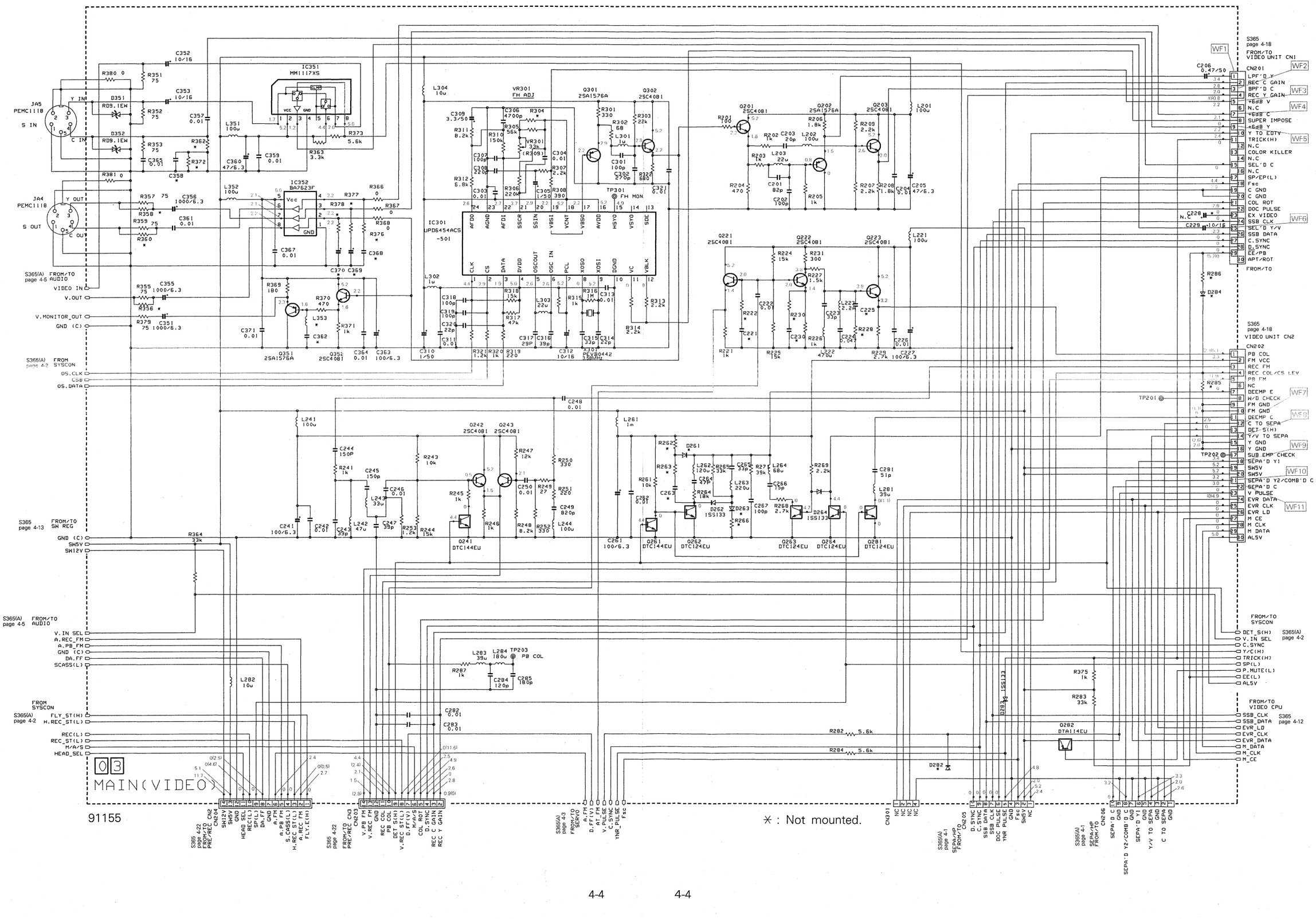
4.3 MAIN(SERVO) CIRCUIT BOARD SCHEMATIC DIAGRAM



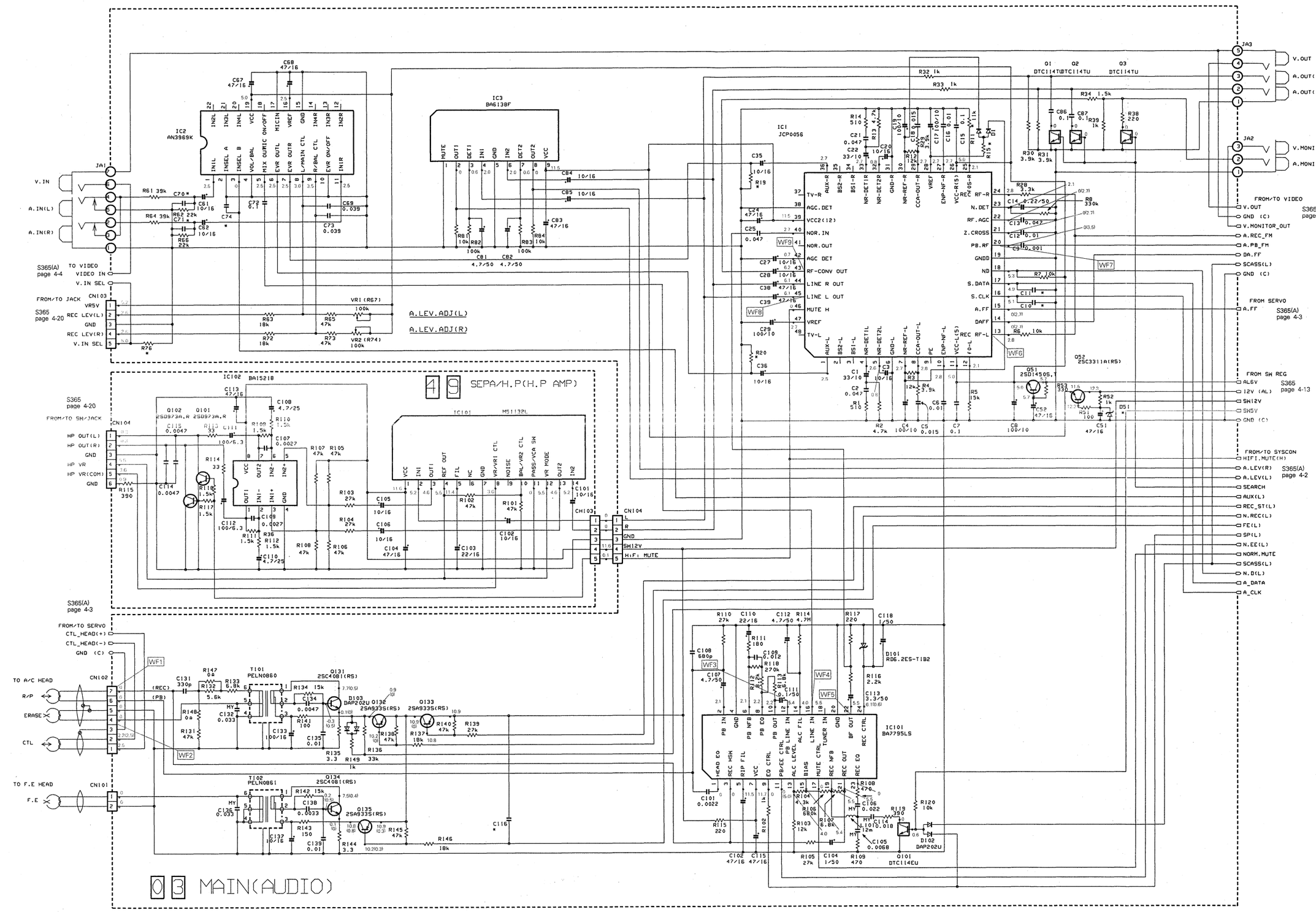
93084

✳ : Not mounted.

4.4 MAIN(VIDEO) CIRCUIT BOARD SCHEMATIC DIAGRAM


MAIN(VIDEO)
91155
03
IC351 MM1117XS
IC352 BA7623F
IC301 UPD6454ACS -501
VR301 FH ADJ
TP301 FH MON
JA5 PEMC1118 S IN
JA4 PEMC1118 S OUT
Y IN
C IN
Y OUT
C OUT
S365(A) FROM/TO page 4-5 AUDIO
VIDEO IN
V.OUT
V.MONITOR_OUT
GND (C)
S365(A) FROM SYSCON page 4-2
OS.CLK
CSB
OS.DATA
S365 page 4-13 FROM/TO SW REG
GND (C)
SW5V
SW12V
S365(A) FROM/TO page 4-5 AUDIO
V.IN SEL
A.REC_FM
A.PB_FM
GND (C)
DA.FF
SCASS(L)
FROM SYSCON S365(A) page 4-2
FLY_ST(H)
H.REC_ST(L)
REC(L)
REC_ST(L)
M/A/S
HEAD_SEL
WF1
WF2
WF3
WF4
WF5
WF6
WF7
WF8
WF9
WF10
WF11
S365 page 4-18 FROM/TO VIDEO UNIT CN1
CN201
LPF'D Y
REC'C GAIN
BPF'D C
REC Y GAIN
+6dB V
N.C
+6dB C
SUPER IMPOSE
+6dB Y
Y TO EDTV
TRICK(H)
N.C
COLOR KILLER
N.C
SEL'D C
N.C
SP/EP(L)
Fsc
C GND
C GND
COL ROT
DOC PULSE
EX VIDEO
SSB CLK
SSB DATA
C.SYNC
D.SYNC
EE/PB
APT/ROT
FROM/TO
S365 page 4-18 VIDEO UNIT CN2
CN202
PB COL
FM VCC
REC FM
REC COL/CS LEV
PB FM
NC
DEEMP E
W/D CHECK
FM GND
FM GND
DEEMP C
C TO SEPA
DET_S(H)
Y/V TO SEPA
Y GND
Y GND
SUB EMP CHECK
SEPA'D Y1
SW5V
SW5V
SEPA'D Y2/COMB'D C
SEPA'D C
V PULSE
EVR DATA
EVR CLK
EVR LD
M CE
M CLK
M DATA
AL5V
FROM/TO SYSCON
DET_S(H) S365(A) page 4-2
V.IN SEL
C.SYNC
Y/C(H)
TRICK(H)
SP(L)
P.MUTE(L)
EE(L)
AL5V
FROM/TO VIDEO CPU
SSB_CLK
SSB_DATA S365 page 4-12
EVR_LD
EVR_CLK
EVR_DATA
M_DATA
M_CLK
M_CE
S365 page 4-22 FROM/TO PRE/REC CN2 CN204
SW12V SW5V GND HEAD SEL REC(L) SP(L) DA.FF GND A.PB FM A.REC FM S.CASS(L) H.REC ST(L) A.REC FM FLY.E(H)
S365 page 4-22 FROM/TO PRE/REC CN3 CN203
V.PB FM V.REC FM GND REC COL PB COL DET S(L) V.REC ST(L) D.FF(V) M/A/S COL ROT C.SYNC REC C GAIN REC Y GAIN
S365(A) page 4-3 FROM/TO SERVO
A.FM D.FF(V) AT_FM V_PULSE C.SYNC YNR_PULSE Fsc
CN301 NC NC NC NC
S365(A) page 4-1 SEPA/HP FROM/TO CN205
D.SYNC C.SYNC SSB DATA SSB CLK DOC PULSE SSB CLK GND Fsc SW5V NC
S365(A) page 4-1 SEPA/HP FROM/TO CN206
SEPA'D C GND GND GND SEPA'D Y1 GND SEPA'D Y2/COMB'D C SEPA'D Y/V TO SEPA C TO SEPA GND
D284 D283 ISS133 D282 DTA114EU
TP201 TP202 TP203 PB COL
X201 FEV80442 3.58MHz
Q201 2SC4081 Q202 2SA1576A Q203 2SC4081
Q221 2SC4081 Q222 2SC4081 Q223 2SC4081
Q241 DTC144EU Q242 2SC4081 Q243 2SC4081
Q261 DTC144EU Q262 DTC124EU Q263 DTC124EU Q264 DTC124EU Q281 DTC124EU
Q301 2SA1576A Q302 2SC4081
Q351 2SA1576A Q352 2SC4081
D241 D242 D243 D261 D262 ISS133 D263 D264 ISS133
L201 100u L202 100u L203 22u L221 100u L222 470u L241 100u L242 47u L243 33u L244 100u L261 1m L262 120u L263 220u L264 68u L281 33u L282 10u L283 39u L284 180u L301 1u L302 68 L303 22u L304 10u L351 100u L352 100u L353 * L371 0.01 L372 *
R201 100 R202 1k R203 1k R204 470 R205 1k R206 1.8k R207 2.2k R208 1.8k R209 2.2k R221 1k R222 * R223 33p R224 15k R225 15k R226 1k R227 1.5k R228 * R229 2.7k R230 * R231 300 R241 1k R242 10k R243 10k R244 15k R245 1k R246 1k R247 12k R248 8.2k R249 27 R250 330 R251 220 R252 330 R253 1.2k R261 10k R262 * R263 * R264 18k R265 33k R266 * R267 100p R268 2.7k R269 2.2k R281 51p R282 5.6k R283 33k R284 5.6k R285 * R286 * R301 330 R302 68 R303 22k R304 * R305 56k R306 220k R307 2.2k R308 390 R309 (330) R310 150k R311 8.2k R312 6.8k R313 2.2k R314 2.2k R315 1k R316 1M R317 47k R318 15k R319 220 R320 1k R321 1.2k R322 * R323 5.6k R324 680 R351 75 R352 75 R353 75 R355 75 R356 * R357 75 R358 * R359 75 R360 * R361 0 R362 * R363 3.3k R364 33k R366 0 R367 0 R368 * R369 180 R370 470 R371 1k R372 * R375 1k R376 0 R377 * R378 * R379 75 R380 0 R381 0
C201 82p C202 100p C203 20p C204 0.01 C205 47/6.3 C206 0.47/50 C221 * C222 0.01 C223 33p C224 0.047 C225 * C226 0.01 C227 100/6.3 C228 * N.C C229 *10/16 C241 100/6.3 C242 0.01 C243 39p C244 150P C245 150p C246 0.01 C247 39p C248 0.01 C249 820p C250 0.01 C251 * C252 0.01 C261 100/6.3 C262 * C263 * C264 47p C265 33p C266 15p C267 100p C281 51p C282 0.01 C283 0.01 C284 120p C285 180p C301 100p C302 270p C303 0.01 C304 0.01 C305 1/50 C306 4700p C307 100p C308 220p C309 3.3/50 C310 1/50 C311 0.01 C312 10/16 C313 0.01 C314 2.2p C315 33p C316 22p C317 29P C318 100p C319 100p C320 22p C321 0.01 C322 0.01 C351 1000/6.3 C352 10/16 C353 10/16 C355 1000/6.3 C356 1000/6.3 C357 0.01 C358 * C359 0.01 C360 47/6.3 C361 0.01 C362 * C363 100/6.3 C364 0.01 C365 0.01 C367 0.01 C368 * C369 * C370 *
IC1 IC2 IC3 IC4 IC5 IC6 IC7 IC8
VCC GND CLOCK
SW12V SW5V GND HEAD SEL REC(L) SP(L) DA.FF GND A.PB FM A.REC FM S.CASS(L) H.REC ST(L) A.REC FM FLY.E(H)
V.PB FM V.REC FM GND REC COL PB COL DET S(L) V.REC ST(L) D.FF(V) M/A/S COL ROT C.SYNC REC C GAIN REC Y GAIN
A.FM D.FF(V) AT_FM V_PULSE C.SYNC YNR_PULSE Fsc
NC NC NC NC
D.SYNC C.SYNC SSB DATA SSB CLK DOC PULSE SSB CLK GND Fsc SW5V NC
SEPA'D C GND GND GND SEPA'D Y1 GND SEPA'D Y2/COMB'D C SEPA'D Y/V TO SEPA C TO SEPA GND
AFDO AGND AFDI SSCR SSIN VBSI VCNT VBSO AVDD HSYO VSYO SDE
CLK CS DATA DVDD OSCOUT OSC IN PCL XOSO XOSI DGND VC VBLK
Vcc GND
✳ : Not mounted.

4.5 MAIN(AUDIO) CIRCUIT BOARD SCHEMATIC DIAGRAM

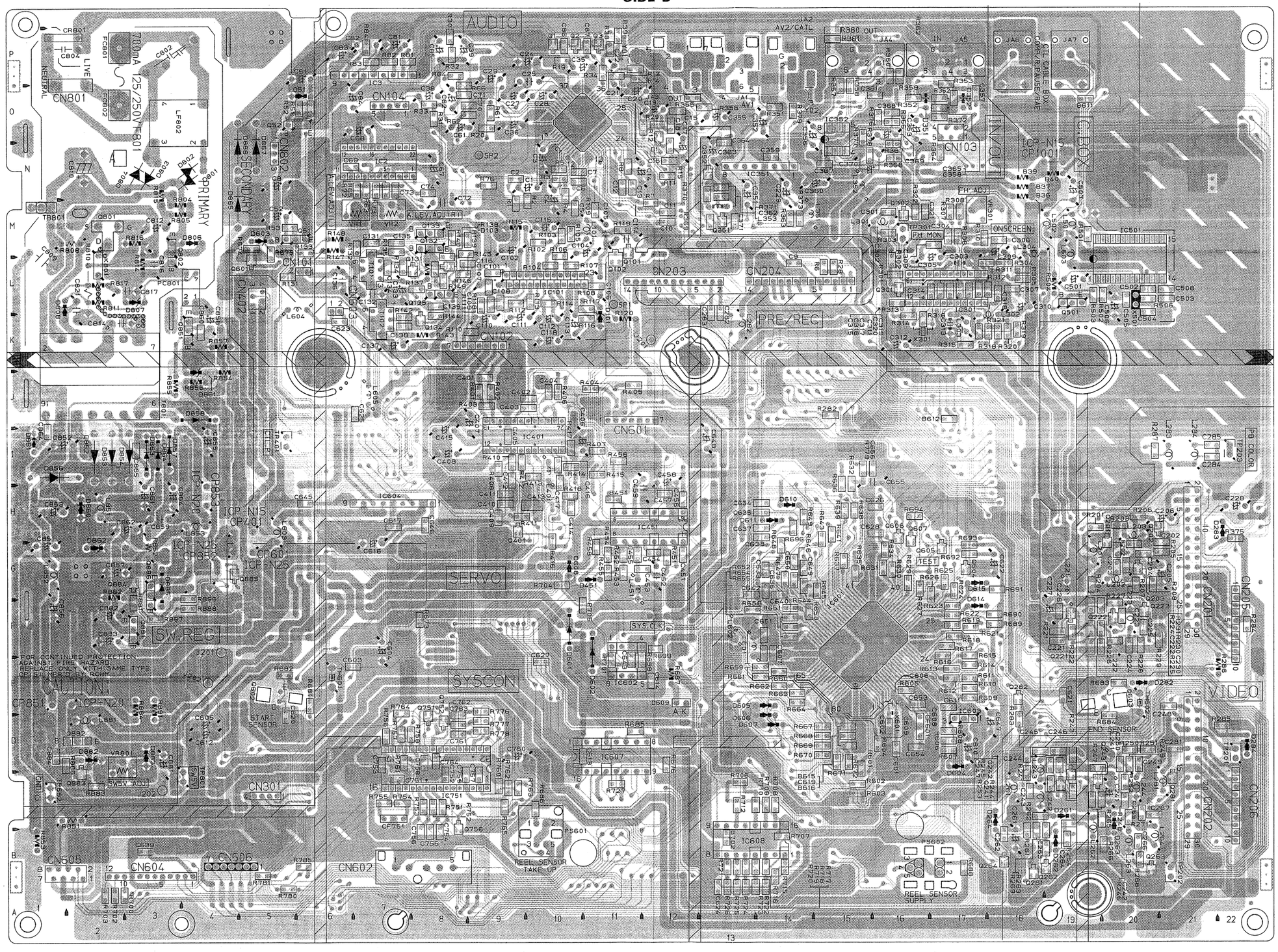


91148

⚹ : Not mounted.

4.6 MAIN CIRCUIT BOARD

— SIDE B —



SL81112-001

: SIDE A pattern

: SIDE B pattern

● ADDRESS TABEL OF BOARD PARTS

Each address may have an address error by one interval.

Side — A-1C — Y axis / X axis

IC1	11O	D351	17O	R102	10L	R286	22E	R604	16D	R702	2A	C8	5M	C229	14M	C452	12G	C812	3M	B37	18M
IC2	8N	D352	17O	R103	10M	R287	20I	R605	16E	R703	2A	C9	14L	C230	20F	C453	12G	C814	3K	B39	18N
IC3	8O	D451	11G	R104	10L	R301	16L	R606	17D	R704	10G	C10	12M	C241	20C	C454	12G	C816	3L	B40	19N
IC101	9L	D601	10F	R105	10M	R302	16L	R607	17D	R705	11F	C11	12M	C242	20C	C455	11G	C817	2L	B451	11H
IC301	18K	D602	11F	R106	10L	R303	16M	R608	17D	R706	13C	C12	11M	C243	18C	C456	12H	C821	2K	B611	19O
IC351	14N	D603	5M	R107	10L	R304	18L	R609	17E	R707	14B	C13	11M	C244	18D	C457	12H	C851	1G	B612	17I
IC352	15N	D604	17D	R108	11L	R305	18L	R610	17E	R708	14C	C14	12N	C245	18D	C458	12H	C852	2I	B615	15D
IC401	10I	D605	14E	R109	11M	R306	17M	R611	17E	R709	14C	C15	12O	C246	19D	C459	12H	C853	2H	B616	15D
IC451	12G	D606	14D	R110	9K	R307	17M	R612	17E	R710	14C	C16	12N	C247	19D	C501	19L	C854	3H	B702	13B
IC501	20L	D607	14D	R111	9K	R308	17M	R613	17E	R712	13C	C17	12N	C248	21D	C502	20L	C855	4I		
IC601	15F	D608	10G	R112	9K	R310	18M	R614	17E	R715	14B	C18	12N	C249	20D	C503	21K	C856	1F	FC801	2P
IC602	11F	D609	12E	R113	10K	R311	18L	R615	17E	R716	14B	C19	12O	C250	20D	C504	20K	C857	3G	FC802	2O
IC603	17D	D610	14H	R114	10K	R312	18L	R616	17E	R717	14B	C20	12O	C261	18B	C505	20K	C858	4K		
IC604	8H	D611	14H	R115	10M	R313	16K	R617	17F	R718	14B	C21	11O	C262	18B	C506	20L	C859	3H	CP401	5G
IC607	10D	D614	18F	R116	11K	R314	16K	R618	17F	R719	13B	C22	11P	C263	19B	C507	19M	C860	4K	CP601	5G
IC608	14B	D615	18G	R117	11K	R315	17K	R619	17F	R720	13B	C24	10P	C264	19C	C508	21L	C861	3H	CP851	2E
IC751	9C	D801	3M	R118	9K	R316	16K	R621	17F	R721	13B	C25	10O	C265	20C	C601	16D	C862	3H	CP852	4G
		D802	4N	R119	11M	R317	17K	R622	17F	R722	14A	C27	10O	C266	20B	C602	16D	C864	1I	CP853	4H
Q1	10P	D803	3M	R120	11K	R318	18K	R623	17F	R723	14A	C28	10O	C267	20C	C603	7E	C865	3I	CP1001419GN	
Q2	10P	D804	3N	R131	5L	R319	18K	R624	17G	R724	13A	C29	9O	C281	21D	C604	7F	C881	3D		
Q3	11P	D806	4L	R132	7L	R320	18K	R625	17G	R725	13A	C35	11O	C282	13K	C605	4D	C882	2F	CF601	16D
Q51	6M	D807	3K	R133	6L	R321	18K	R626	17F	R726	13A	C36	10N	C283	13K	C606	16E	C883	2F	CF751	7C
Q52	6N	D808	2K	R134	7L	R322	16M	R627	16G	R727	11C	C38	8O	C284	21I	C607	14E	C884	1D		
Q101	11L	D851	1I	R135	7L	R351	14O	R629	16G	R751	8C	C39	8P	C285	21I	C608	16E			CN101	6L
Q131	8L	D852	2H	R136	8L	R352	16O	R630	16G	R752	8C	C51	6O	C301	16M	C609	16D	L101	11M	CN102	9K
Q132	8L	D853	2H	R137	8L	R353	17O	R631	16G	R753	8C	C52	5M	C302	16M	C610	17D	L201	19G	CN103	17N
Q133	8M	D854	3H	R138	8L	R355	12O	R632	15H	R754	7C	C61	9N	C303	17L	C611	17D	L202	20G	CN104	7O
Q134	8K	D856	2H	R139	9M	R356	13O	R634	16G	R755	7C	C62	8O	C304	17M	C612	4D	L203	20G	CN201	21H
Q135	8L	D857	3I	R140	8M	R357	15O	R635	15G	R756	7D	C67	8N	C305	17L	C613	11D	L221	19F	CN202	21E
Q201	20G	D858	4I	R141	8L	R358	15O	R636	15H	R757	7D	C68	7N	C306	18M	C614	12E	L222	20E	CN203	13L
Q202	21H	D860	2H	R142	7K	R359	16O	R637	15G	R758	8D	C69	7N	C307	18L	C616	7G	L223	20F	CN204	15L
Q203	20G	D861	4J	R143	8K	R360	16O	R638	15H	R760	9C	C70	9O	C308	17L	C617	7H	L241	20C	CN205	22G
Q221	19F	D862	2G	R144	8K	R362	17O	R639	15H	R761	7D	C71	8O	C309	18L	C619	15D	L242	18C	CN206	22C
Q222	20F	D863	3I	R145	9L	R363	14M	R641	15G	R762	9C	C72	8M	C310	18K	C620	5D	L243	18C	CN301	5C
Q223	20F	D864	3I	R146	8L	R364	17N	R643	15G	R763	9C	C73	7M	C311	17L	C621	19E	L244	20C	CN402	5K
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Q242	19C	D866	5O	R148	6M	R367	16N	R645	15G	R765	9C	C81	7P	C313	17K	C623	6K	L262	19B	CN602	7B
Q243	19C	D867	5O	R149	8L	R368	16N	R646	14G	R776	9D	C82	7P	C314	17L	C624	13A	L263	20B	CN603	6K
Q261	18B	D882	2D	R201	19H	R369	13M	R647	14G	R777	9D	C83	7P	C315	17L	C625	7J	L264	20B	CN604	4B
Q262	19B	D883	3D	R202	20G	R370	13M	R648	14G	R778	9D	C84	7O	C316	17L	C626	16H	L281	21C	CN605	2B
Q263	20B	D885	3G	R203	20H	R371	13M	R649	14H	R779	15I	C85	8P	C317	17L	C627	10E	L282	13K	CN606	5B
Q264	18B			R204	19G	R372	17O	R650	14F	R780	5A	C86	10P	C318	18L	C628	16G	L283	21I	CN801	2O
Q281	21C	R1	9M	R205	21G	R373	14M	R651	14F	R781	5B	C87	11P	C319	18L	C633	14G	L284	21I	CN802	5N
Q282	18E	R2	10M	R206	20H	R375	22G	R652	14F	R785	6B	C101	9L	C320	17L	C634	14H	L301	16M		
Q301	16L	R3	10N	R207	20G	R376	16O	R654	14F	R804	3M	C102	9L	C321	16M	C635	14H	L302	17K	Y01	11P
Q302	16M	R4	10M	R208	20G	R377	15N	R655	14F	R805	3M	C104	11L	C351	13M	C636	14G	L303	17K	Y02	14O
Q351	13M	R5	10N	R209	20G	R378	16N	R658	14F	R808	1L	C105	11L	C352	14O	C637	14H	L304	18L		
Q352	13N	R6	15L	R221	19F	R379	14O	R659	14E	R810	2K	C106	11L	C353	16O	C638	14G	L351	15M	PC801	4K
Q401	9H	R7	12M	R222	19F	R380	15P	R660	14E	R811	2K	C107	9L	C355	13O	C639	3B	L352	15M		
Q501	19K	R8	11N	R224	19F	R381	15P	R661	14E	R814	3L	C108	9L	C356	15N	C640	14F	L353	13M	J201	12K
Q601	5L	R11	12N	R225	19F	R401	9J	R662	14E	R815	3M	C109	9K	C357	17O	C642	13F	L401	10H	J202	4E
Q602	5E	R12	12N	R226	20F	R402	9J	R663	14E	R816	3L	C110	9K	C358	17O	C643	11E	L451	11F		
Q603	20E	R13	11O	R227	20F	R403	9J	R664	14E	R817	2L	C111	10K	C359	14N	C645	6H	L501	19M	T101	7L
Q604	17G	R14	12O	R228	20F	R404	11J	R667	15D	R851	2C	C112	10K	C360	15M	C646	8H	L502	19M	T102	7K
Q605	17G	R15	12N	R229	21F	R405	11J	R668	15D	R852	3G	C113	10K	C361	16O	C647	18D	L503	19L	T801	1K
Q606	16G	R19	10P	R230	20F	R406	10J	R669	15D	R853	1B	C114	11M	C362	13M	C648	13I	L601	14E		
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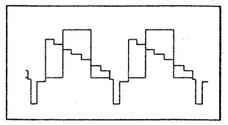
Q751	8D	R28	15L	R241	18C	R408	9I	R671	15D	R855	3J	C116	9L	C364	13N	C650	14G	L603	5G		
Q752	8D	R29	12N	R243	19D	R410	9I	R672	15D	R856	4J	C118	10K	C365	17O	C651	14F	L604	6K	LF802	4O
Q756	8B	R30	8P	R244	19C	R411	9H	R673	8F	R857	4K	C131	7L	C367	15N	C652	14E	L605	7J		
Q801	2M	R31	8O	R245	19D	R412	9I	R674	5L	R881	3F	C132	7L	C368	16O	C653	16E	L851	2H	JA1	13P
Q802	3L	R32	8P	R246	19C	R413	10H	R675	5L	R882	2F	C133	7L	C369	16N	C654	16D	L852	1G	JA2	14P
Q851	4K	R33	8O	R247	19C	R414	10I	R676	12D	R883	2C	C134	7L	C370	16N	C655	16H	L853	4H	JA3	12P
Q881	3F	R34	11O	R248	20C	R415	11H	R681	6E	R884	3D	C135	7L	C371	13M	C656	16I	L881	2D	JA4	15P
Q882	2D	R38	11P	R249	20D	R416	10G	R682	5E	R886	2D	C136	6L	C401	9J	C751	7C			JA5	17P
Q883	2C	R39	11P	R250	20D	R417	10I	R683	20E	R888	4F	C137	7K	C402	10J	C752	8C	TP201	22D	JA6	18P
Q884	3G	R51	6O	R251	20D	R418	10H	R684	20D	R891	3D	C138	7K	C403	10J	C753	7D	TP202	21B	JA7	19P
Q885	4G	R52	6O	R252	20C	R451	12G	R685	11D	R896	4F	C139	8K	C404	10J	C754	8B	TP203	22I		
Q886	3G	R53	5M	R253	19C	R452	11G	R686	10C	R897	3F	C201	20G	C405	9I	C755	8B	TP301	16M	PS601	10B
		R61	9O	R261	18B	R453	11G	R687	12E			C202	21G	C406	11I	C756	8B	TP401	5I	PS602	17B
D1	12N	R62	9O	R262	18C	R454	11G	R688	17B	VR1	6M	C203	20G	C407	9J	C757	9C	TP692	1C		
D51	6O	R63	7M	R263	19B	R455	11G	R689	18F	VR2	7M	C204	20G	C408	8I	C758	8D	TP801	4C	TH601	6E
D101	11K	R64	8O	R264	19B	R456	11I	R690	18F	VR301	17M	C205	21G	C409	9H	C759	9C			TH602	20D
D102	11L	R65	7M	R265	20C	R458	11G	R691	18G	VR801	2C	C206	21H	C410	9H	C760	10D	X301	16K		
D103	8L	R66	8O	R266	20B	R501	19M	R692	17G			C221	19F	C411	9H	C761	8D	X501	20L	SP1	11K
D261	19C	R72	7M	R268	20B	R502	20L	R693	17G	C1	10M	C222	19F	C412	9H	C762	8D	X601	16D	SP2	9N
D262	19B	R73	7M	R269	18B	R503	19L	R694	16H	C2	9N	C223	20F	C413	10H	C763	8D				
D263	20C	R76	9M	R271	20C	R504	19L	R696	14H	C3	10N	C224	20F	C414	10H	C764	8D	TB801	1M		
D264	18C	R81	8P	R282	15J	R506	20K	R698	12E	C4	10M	C225	20F	C415	8I	C802	4P				
D282	20E	R82	7P	R283	18D	R601	15C	R699	12E	C5	10M	C226	19F	C416	10I	C804	1P	K801	2L		
D283	22H	R83	7P	R284	22F	R602	15C	R700	3A	C6	10M	C227	19F	C417	10H	C809	1L				
D284	22D	R84	7P	R285	22D	R603	15C	R701	11E	C7	10N	C228	22H	C451	12G	C810	2M	B36	18M		

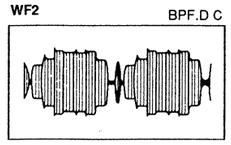
– VIDEO –

WF1 CN201-1 LPF.D Y



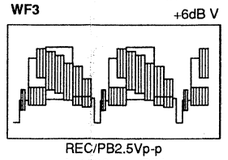
REC./PB1.0Vp-p
50mV/20µsec/DIV

WF2 CN201-3 BPF.D C



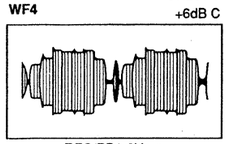
REC/PB0.7Vp-p
50mV/20µsec/DIV

WF3 CN201-5 +6dB V



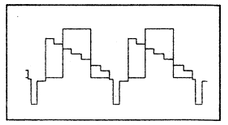
REC/PB2.5Vp-p
0.1V/20µsec/DIV

WF4 CN201-7 +6dB C



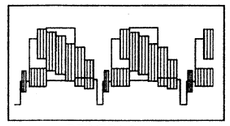
REC/PB1.2Vp-p
0.1V/20µsec/DIV

WF5 CN201-9 +6dB Y



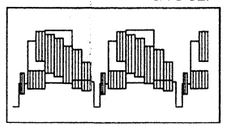
REC/PB2.2Vp-p
0.1V/20µsec/DIV

WF6 CN201-25 SEL.D Y/V



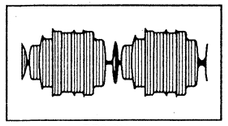
REC/PB1.0Vp-p
50mV/20µsec/DIV

WF7 CN202-12 C TO SEP



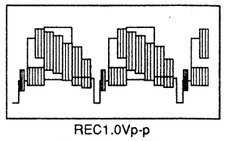
REC0.9Vp-p
50mV/20µsec/DIV

WF7 CN202-12 C TO SEP



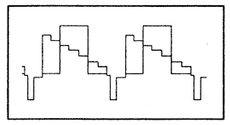
PB0.8Vp-p
50mV/20µsec/DIV

WF8 CN202-14 Y/V TO SEP



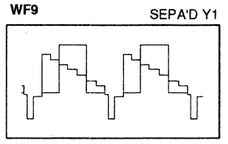
REC1.0Vp-p
50mV/20µsec/DIV

WF8 CN202-14 Y/V TO SEP



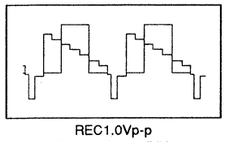
PB1.0Vp-p
50mV/20µsec/DIV

WF9 CN202-18 SEPA'D Y1



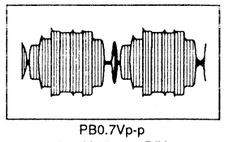
REC/PB1.0Vp-p
50mV/20µsec/DIV

WF10 CN202-21 SEPA.D Y2/COMB.D C



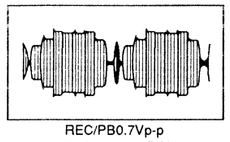
REC1.0Vp-p
50mV/20µsec/DIV

WF10 CN202-21 SEPA.D Y2/COMB.D C



PB0.7Vp-p
50mV/20µsec/DIV

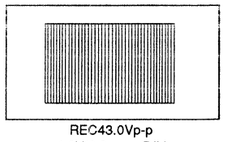
WF11 CN202-22 SEPA.D C



REC/PB0.7Vp-p
50mV/20µsec/DIV

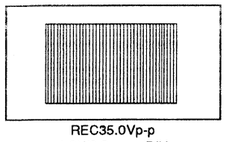
– AUDIO –

WF1 CN102-7



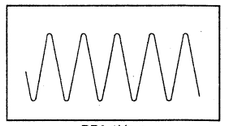
REC43.0Vp-p
1.0V/0.2msec/DIV

WF2 CN102-4



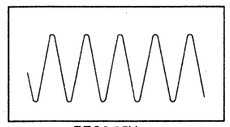
REC35.0Vp-p
1.0V/0.2msec/DIV

WF3 IC101-12



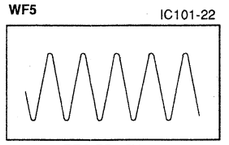
PB0.1Vp-p
5mV/0.5msec/DIV

WF4 IC101-16



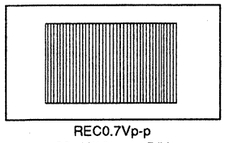
REC0.25Vp-p
10mV/0.5msec/DIV

WF5 IC101-22



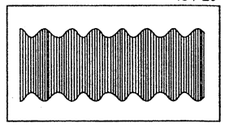
REC/PB2.5Vp-p
0.1V/5msec/DIV

WF6 IC1-13



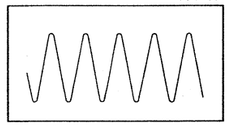
REC0.7Vp-p
20mV/10msec/DIV

WF7 IC1-20



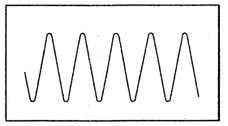
PB0.4Vp-p
20mV/1msec/DIV

WF8 IC1-45



REC1.2Vp-p/PB1.0Vp-p
50mV/0.5msec/DIV

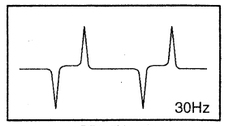
WF9 IC1-43



REC2.4Vp-p/PB2.0Vp-p
0.1V/0.5msec/DIV

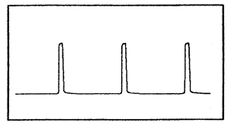
– SERVO –

WF1 TP401 CTL.PULSE



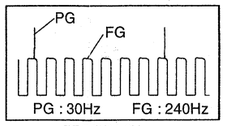
PB2.5Vp-p
0.1V/5msec/DIV

WF2 IC401-2 C.SYNC



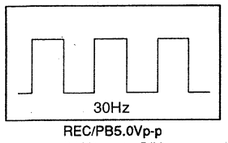
REC/PB5.0Vp-p
0.2V/20µsec/DIV

WF3 IC401-22 FG/PG



REC/PB4.0Vp-p
0.2V/5msec/DIV

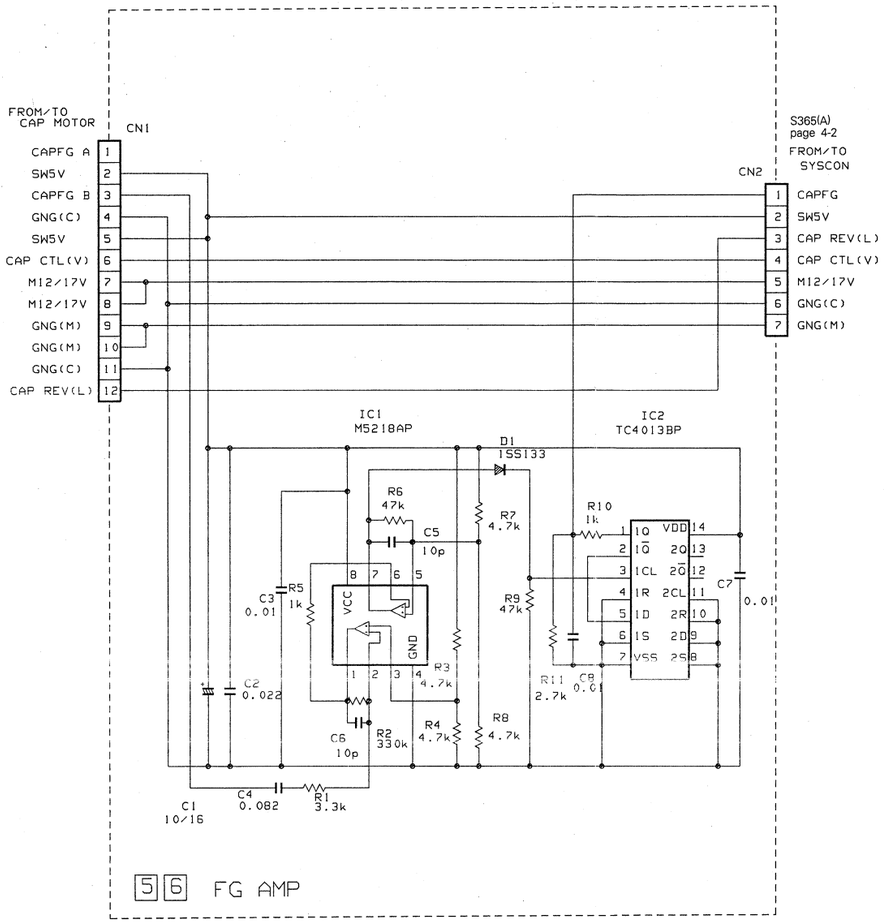
WF4 IC401-21 D.FF



REC/PB5.0Vp-p
0.2V/5msec/DIV

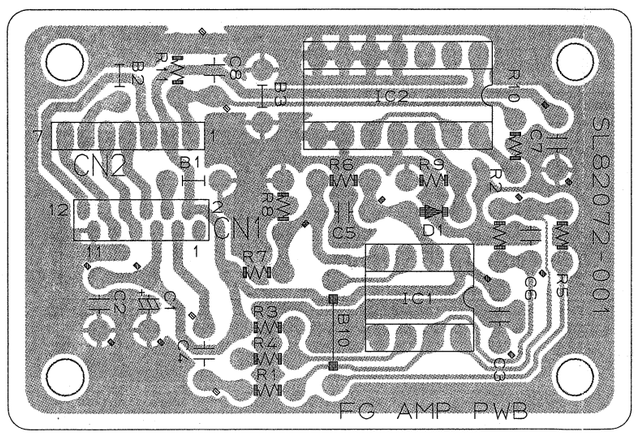
4-7

4.7 FG AMP CIRCUIT BOARD SCHEMATIC DIAGRAM



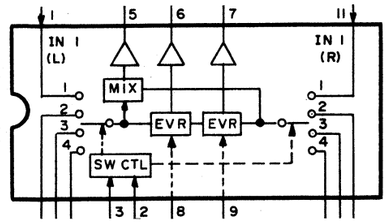
94018

4.8 FG AMP CIRCUIT BOARD

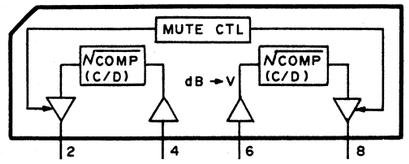


4.9 IC BLOCK DIAGRAMS

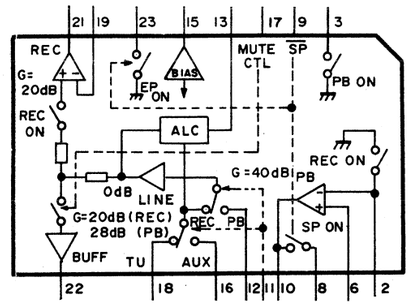
■ **AN3969K[MATSUSHITA]**
(Audio Level Controller)



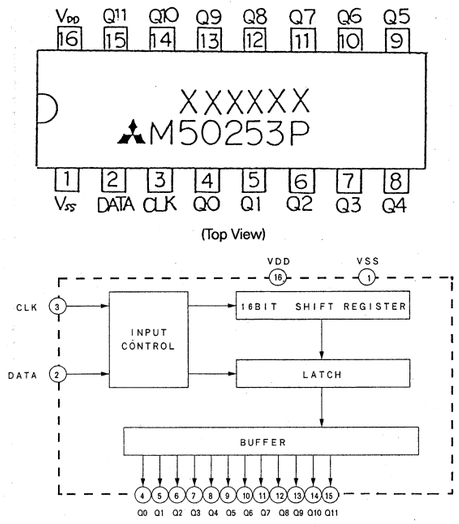
■ **BA6138[ROHM]**
(Audio Level Detector)



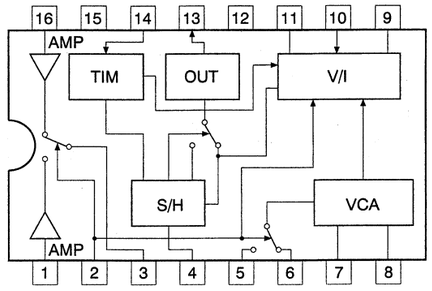
■ **BA7795LS[ROHM]**
(Normal Audio Signal Processor)



■ **M50253P [MITSUBISHI]**
(Serial/Parallel Converter)



■ **BA7039[ROHM]**
(VTR Auto Tracking Intrface)

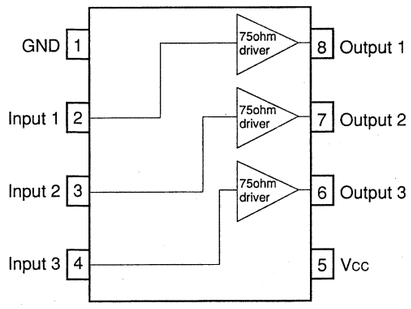


(Top View)

Pin Function

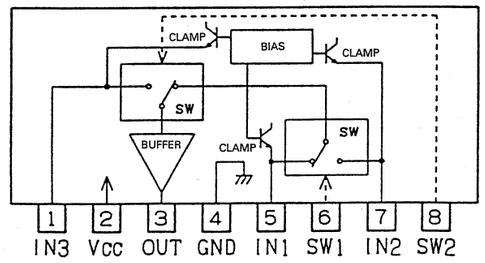
Pin No.	Function	Pin No.	Function
1	AUDIO FM IN	9	V/I RESISTOR
2	VFM/AFM CTL	10	SP/EP GAIN CTL
3	AMP OUT	11	CHARGED CAPACITOR
4	HOLD CAPACITOR	12	GND
5	AUDIO FILTER IN	13	DC OUT
6	VIDEO FILTER IN	14	D F.F IN
7	VIDEO GAIN ADJ.	15	Vcc
8	AUDIO GAIN ADJ.	16	VIDEO FM IN

■ **BA7623F-X[ROHM]**
(VTR 3-Input 3-Output 75Ω Driver)



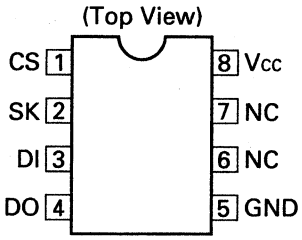
(Top view)

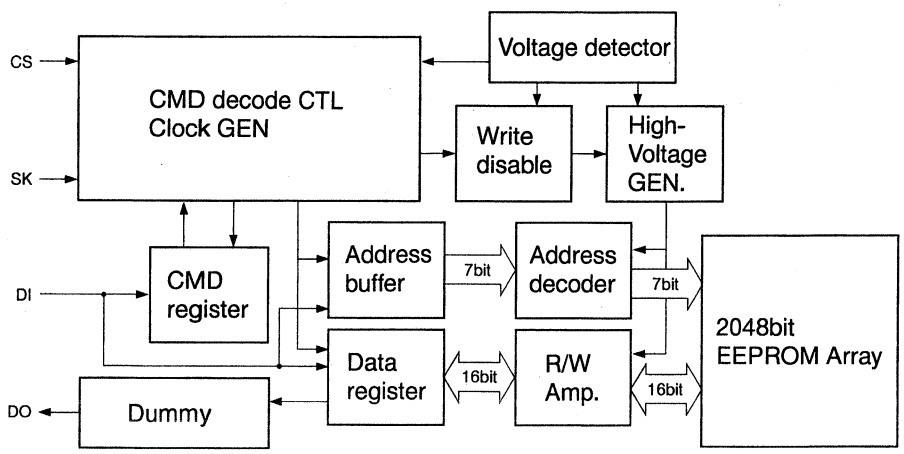
■ **MM1117XS [MITSUMI]**
(2 Input 1 Output Video Switch)



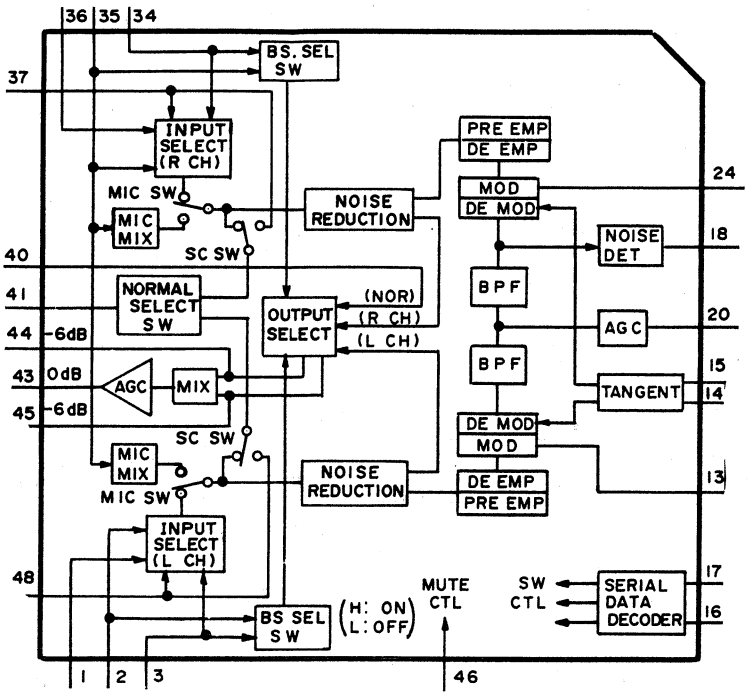
4-8

■ **BR93LC56A [ROHM]**
(EE PROM)

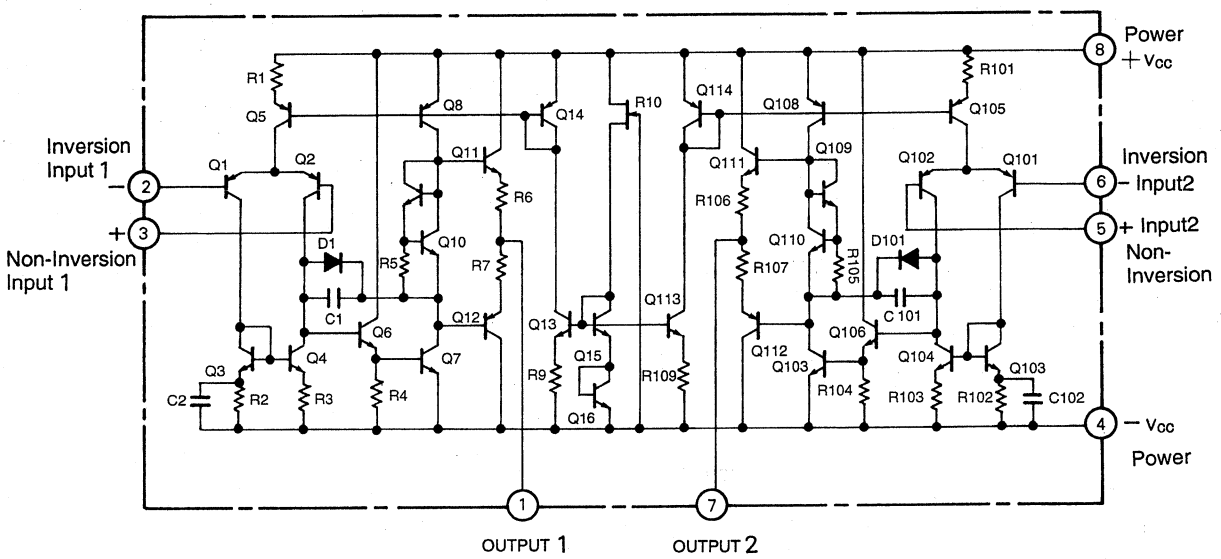


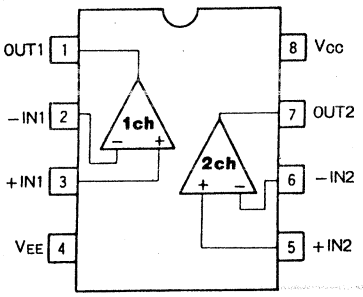


■ **JCP0056 [JVC]**
(FM Audio Signal Processor)

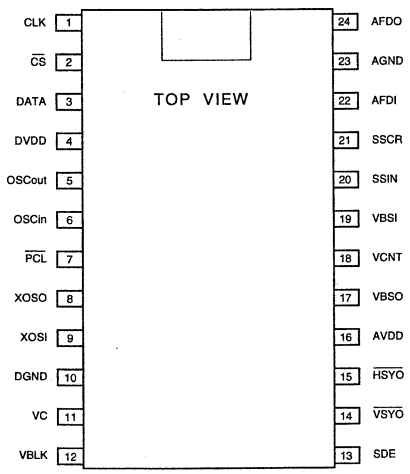


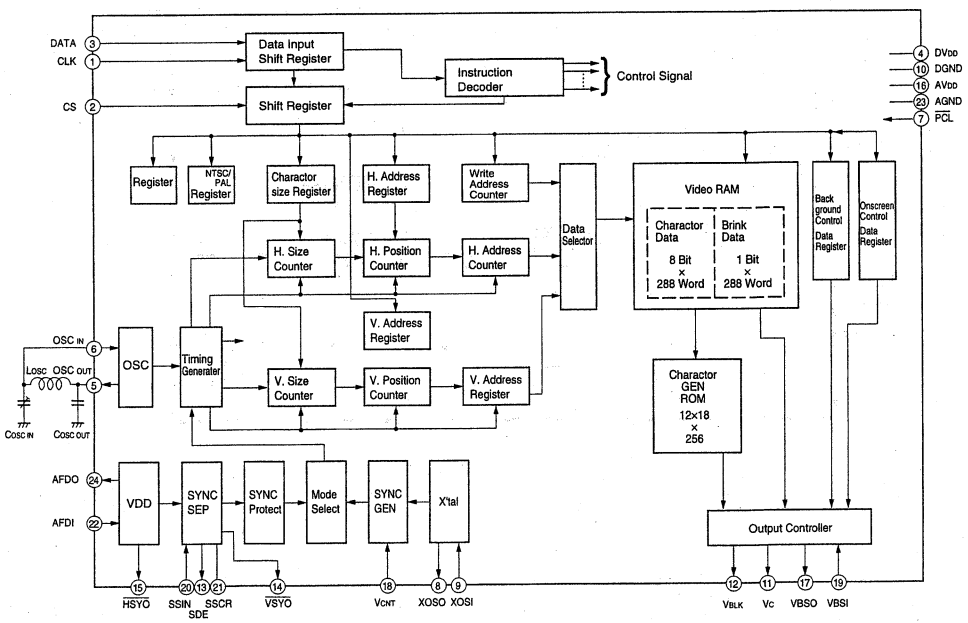
■ M5218AP [MITSUBISHI]
(Dual Op.Amp.)



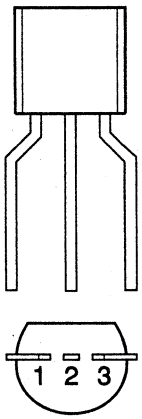


■ UPD6454CS-513 [NEC]
(Character Generator)



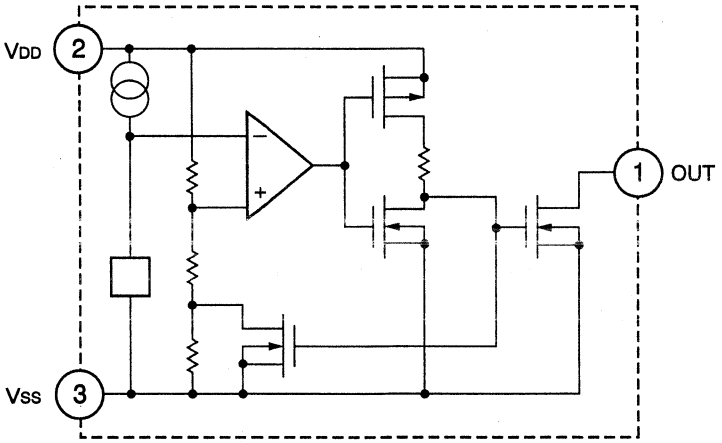


■ S-80728AN-Z [SEIKO]
(System Reset)

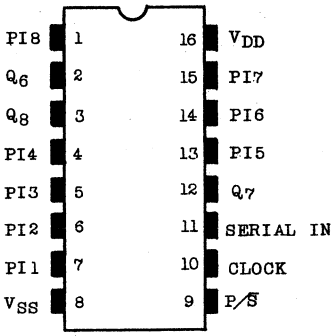


BOTTOM VIEW

1. OUT
2. V_{DD}
3. V_{SS}



■ TC4021BP [TOSHIBA]
(8 Stage Static Shift Register)



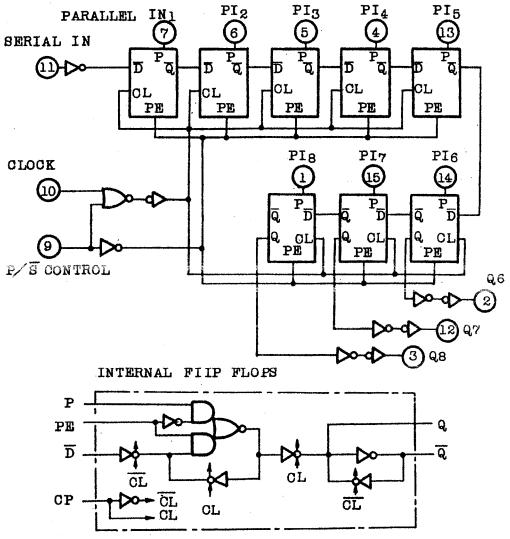
(TOP VIEW)

TRUTH TABLE

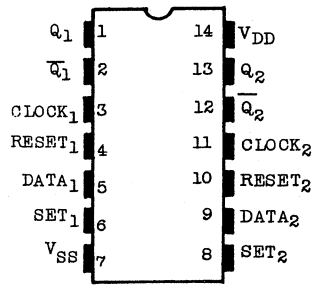
INPUTS					OUTPUTS △	
CLOCK △△	P/S	PI_1	PI_n	SI	Q_1	Q_n
↓	L	※	※	L	L	Q_{n-1}
↓	L	※	※	H	H	Q_{n-1}
↑	L	※	※	※	No Change	
※	H	L	L	※	L	L
※	H	L	H	※	L	H
※	H	H	L	※	H	L
※	H	H	H	※	H	H

n : 2 ~ 8
△ : Q_1 ~ Q_5 Internal
△△ : Level
※ : Don't Care

LOGIC DIAGRAM

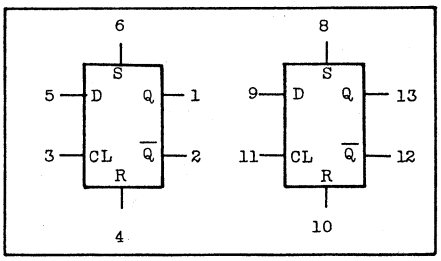


■ TC4013BP [TOSHIBA]
(Dual D-Type Flip Flop)



(TOP VIEW)

BLOCK DIAGRAM

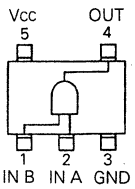


TRUTH TABLE

INPUTS				OUTPUTS	
RESET	SET	DATA	CLOCK △	Q_{n+1}	$\overline{Q}_{n+1}$
L	H	※	※	H	L
H	L	※	※	L	H
H	H	※	※	H	H
L	L	L	↓	L	H
L	L	H	↓	H	L
L	L	※	↑	Q_n•	$\overline{Q}_n$•

※ : Don't Care
△ : Level Change
• : No Change

TC7S08F-X [TOSHIBA]
(2 Input Single AND Gate)

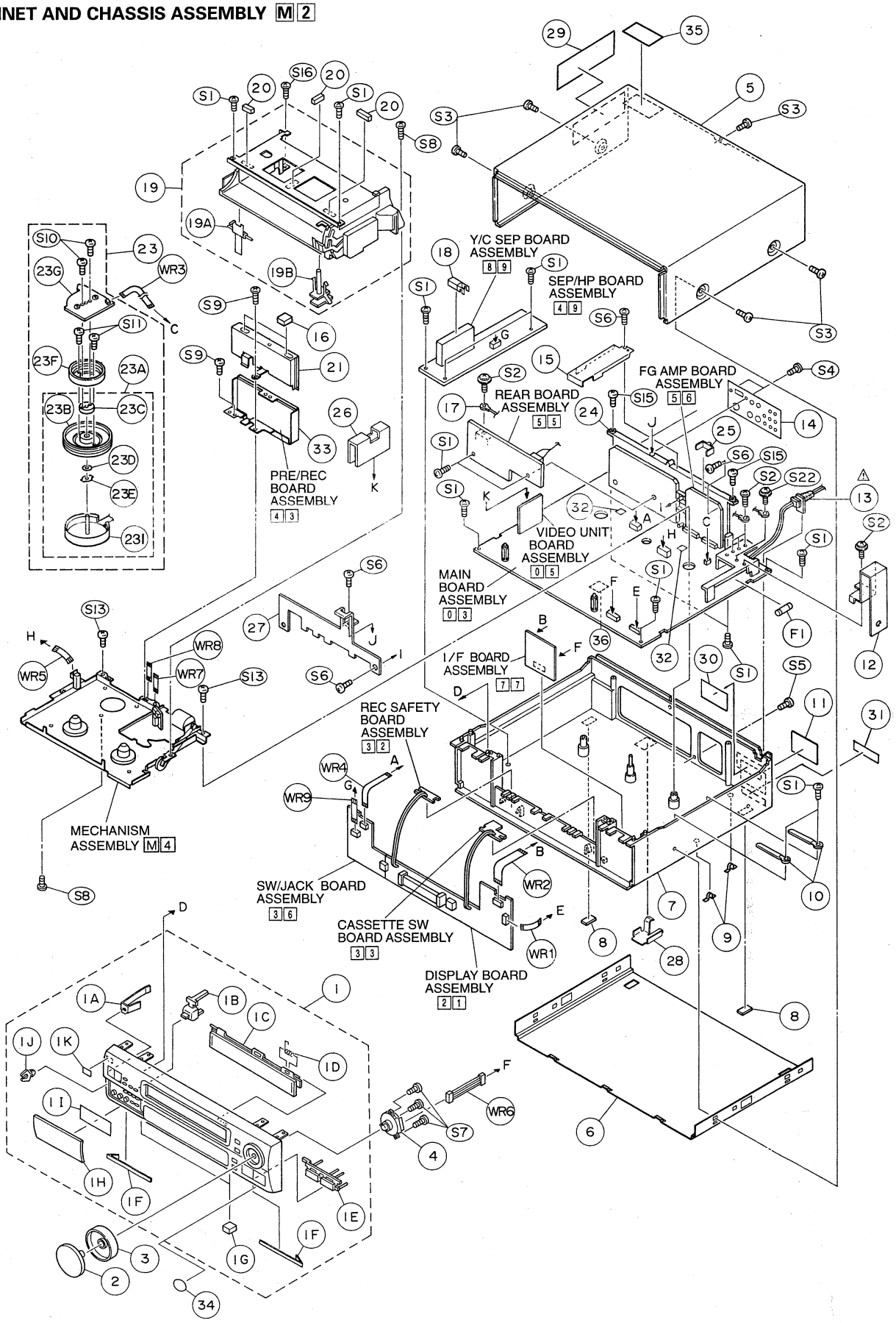


TRUE Table

A	B	X
L	L	L
L	H	L
H	L	L
H	H	H

SECTION 5
EXPLODED VIEWS AND PARTS LIST

5.1 CABINET AND CHASSIS ASSEMBLY M 2


Y/C SEP BOARD ASSEMBLY 8 9
SEP/HP BOARD ASSEMBLY 4 9
FG AMP BOARD ASSEMBLY 5 6
REAR BOARD ASSEMBLY 5 5
PRE/REC BOARD ASSEMBLY 4 3
VIDEO UNIT BOARD ASSEMBLY 0 5
MAIN BOARD ASSEMBLY 0 3
I/F BOARD ASSEMBLY 7 7
REC SAFETY BOARD ASSEMBLY 3 2
MECHANISM ASSEMBLY M 4
SW/JACK BOARD ASSEMBLY 3 6
CASSETTE SW BOARD ASSEMBLY 3 3
DISPLAY BOARD ASSEMBLY 2 1

5.2 CABINET AND CHASSIS ASSEMBLY PARTS LIST M2

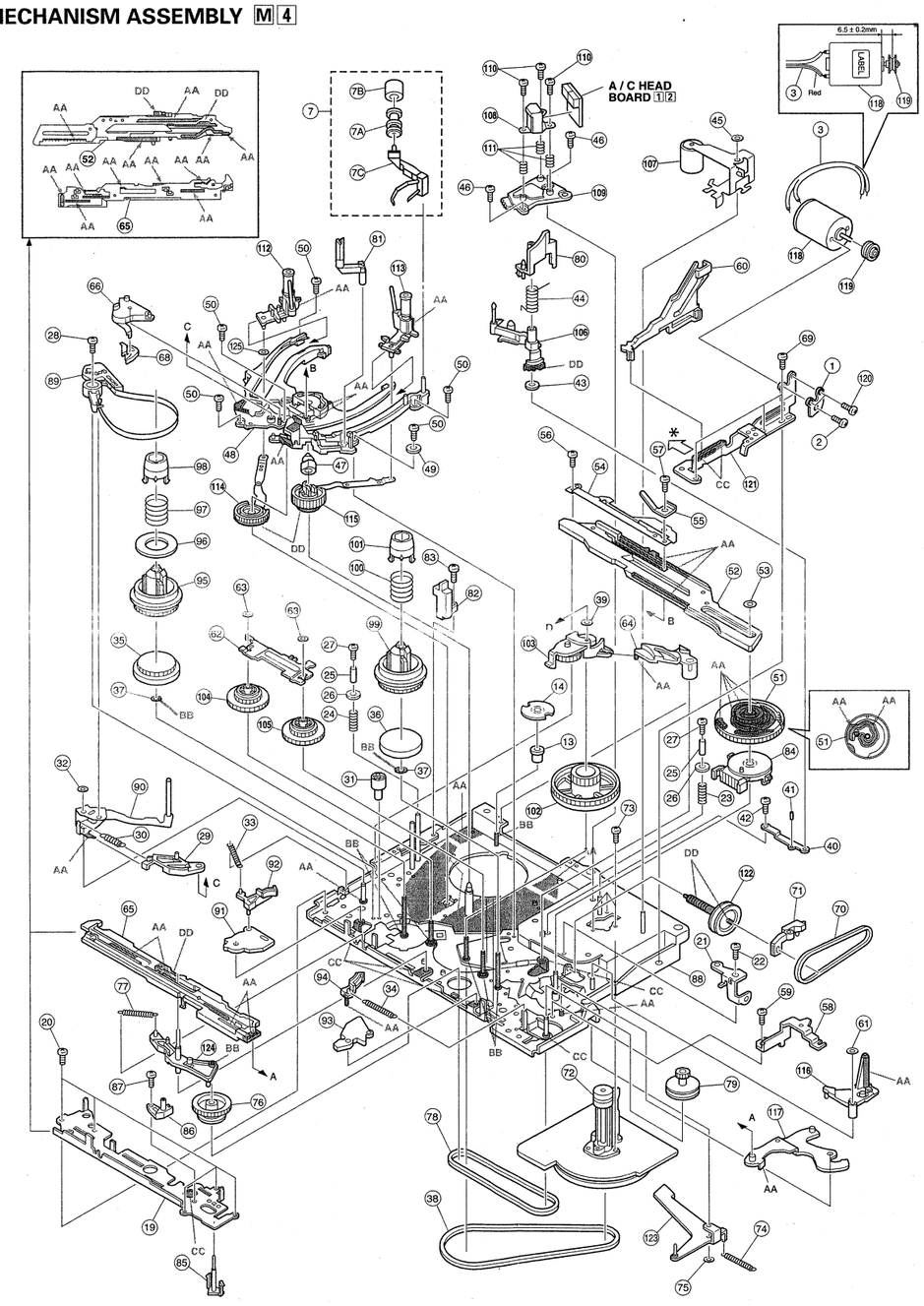
M2MM□□□□

Symbol No.	Part No.	Part Name	Description
1	PQ11802AH	FRONT PANEL ASSEMBLY	
1A	PQ35294	EARTH PLATE	
1B	PQ35290	BUTTON(3)	
1C	PQ21818-25	CASSETTE DOOR	
1D	PQ46448	TORSION SPRING	
1E	PQ21820-11	BUTTON(2)	
1F	PQ46398-4	PLATE(FOOT)	
1G	PQ43013-7	FOOT	
1H	PQ21822-24	DOOR	
1I	PQ35557	PLATE(OPE)	
1J	PEME0960	PUSH OPEN UNIT	
2	PQ35247-3	KNOB	
3	PQ35295-3	KNOB	
4	PEME0757-03	JOG/SHUTTLE ASSEMBLY	
5	PGS30285D	TOP COVER	
6	PQ11668-2-9	BOTTOM COVER	
7	PQ11666-7-20	BOTTOM CHASSIS	
8	PQ43013-3	FOOT	
9	PQ46412-2	EARTH SPRING	
10	PU49485-4	WIRE CLAMP	
11	–	RATING LABEL	
12	PRD49005	EARTH PLATE	
⚠ 13	PEWR0766	POWER CORD	
14	PRD39013	SHEET	
15	PRD44919	BRACKET	
16	PRD30030-150	PAD	
18	PRD44937A-03	CUSHION ASSEMBLY	
19	PGS30402A	CASSETTE HOUSING ASSEMBLY	
19A	PQ21766-1-1	SWITCH LEVER	
19B	PQ46359-1-1	SWITCH PIN	
20	PRD30030-147	PAD	
21	PQ21806-1-2	SHIELD CASE(P/R)	
23	PDV2391A	DRUM ASSEMBLY	Remove the drum base (refer to 2.3.10).
23A	PDM2261Y	DRUM SUB ASSEMBLY	Remove the drum base (refer to 2.3.10).
23B	PDM3353AB	UPPER DRUM ASSEMBLY	
23C	PDM4345A	COLLAR ASSEMBLY	
23D	PDM4050-9	WASHER	
23E	PDM4440A	BRUSH ASSEMBLY	
23F	PDZ0179	ROTOR ASSEMBLY	
23G	PDZ0181-1-2	STATOR ASSEMBLY	
23H	PDM4311A-1	ROLLER ASSEMBLY	
23I	PDM3380L	LOWER DRUM ASSEMBLY	Remove the drum base (refer to 2.3.10).
24	PRD19003-01-02	TERMINAL BOARD	
25	PRD49008	EARTH PLATE	
26	PRD39016-01-02	SHIELD COVER	
27	PRD49007	EARTH PLATE	
28	PRD49009	EARTH PLATE	
29	PRD39015-01-02	CAUTION LABEL	
30	PQ44342-4	CAUTION LABEL	
31	PU47342	STICKER	
32	–	PAD	Refer to 03 MAIN BOARD ASSEMBLY as PD1
33	PQ21805	S.FRAME(P/R)	*1
34	PGD40197	STICKER	(A)
35	PRD44987-02	LABEL	
36	–	PAD	Refer to 03 MAIN BOARD ASSEMBLY as PD3
⚠ F1	QMF51N2-R70	FUSE	0.7A,125V
S1	SDSF3010Z	SCREW	M3 x 10
S2	DPSP3006Z	SCREW	M3 x 6
S3	SXSF3012N	SCREW	M3 x 12
S4	SDSP3008M	SCREW	M3 x 8
S5	SDSF3010M	SCREW	M3 x 10
S6	SDSF3008Z	SCREW	M3 x 8
S7	SDSF2608Z	SCREW	M2.6 x 8
S8	SPSP2606Z	SCREW	M2.6 x 6
S9	SDST2606Z	SCREW	M2.6 x 6
S10	SPSP2606Z	SCREW	M2.6 x 6
S11	SPSH2606Z	SCREW	M2.6 x 6
S13	PRD44050-08	SCREW	
S15	GBSF3010Z	SCREW	M3 x 10
S16	SDST2610Z	SCREW	M2.6 x 10
S22	DPSP4008Z	SCREW	M4 x 8
WR1	PW30802-0814	WIRE ASSEMBLY	FOR:DISP-MAIN
WR2	PW30802-0510	WIRE ASSEMBLY	FOR:DESP-I/F
WR3	PW30803-0422	WIRE ASSEMBLY	FOR:DRUM.M-MAIN
WR4	PW30802-0538	WIRE ASSEMBLY	FOR:SW/JK-MAIN
WR5	PW30701-36AAYY	WIRE ASSEMBLY	FOR:FE.H-MAIN
WR6	PW30202-0772018	WIRE ASSEMBLY	FOR:JOG-I/F
WR7	PW30705-12AAYY	WIRE ASSEMBLY	FOR:A/C.H4-MAIN
WR8	PW30702-12AAYY	WIRE ASSEMBLY	FOR:A/C.H3-MAIN
WR9	PW30802-0630	WIRE ASSEMBLY	FOR:SW/JK-HP.AP

*1
The S. FRAM (P/R) has been processed since the serial No. between XX3X7659 and XX3X7858.

5-2

5.3 MECHANISM ASSEMBLY M 4



NOTE: The section marked in AA, BB, CC and DD indicated lubrication and greasing areas.
***When installing the No. 121 guide bracket, drow up to the direction by the arrow.**

Gategory	JVC part No.	MARK
Greas	KYODO-SH-P	AA
	KANTO-GB-TS-1	DD
	MD-2000	CC
Oil	COSMO-HV56	BB

5.4 MECHANISM ASSEMBLY PARTS LIST M 4

M 4 M M □ □ □ □

Symbol No.	Part No.	Part Name	Description
1	PRD45167-1-2	MOTOR GUIDE	
2	SDSP2604Z	SCREW	M2.6 x 4
3	PW30101-80AJ632	WIRE	
7	PQ46436A-1	H.CLEANER ARM ASSEMBLY	
7A	PQ46418-1-2	CLEANER ROLLER	
7B	PQ46419-1-2	HEAD CLEANER	
7C	PQ35159-1-1	H.CLEANER ARM	
13	PDM4311A-1	ROLLER ASSEMBLY	
14	PQ44230	INERTIA PLATE	
19	PRD20625	MAIN PLATE	
20	SPST2606Z	SCREW	M2.6 x 6
21	PRD45055	W.GEAR BRACKET	
22	SDSP2606Z	SCREW	M2.6 x 6
23	PRD30023-62	COMP.SPRING 62	
24	PRD30023-63	COMP.SPRING 63	
25	PRD45080	TAPE GUIDE	
26	PRD45081	GUIDE FLANGE	
27	PRD43165	SCREW	M2 x 6
28	SDSP2606Z	SCREW	M2.6 x 6
29	PQ35012-1-5	T.ARM LEVER	
30	PQM30001-385109	TEN.SPRING 109	
31	PQ46302-1-3	ADJUST PIN	
32	PQM30017-47	SLIT WASHER	
33	PQM30001-393	TEN.SPRING 393	
34	PQM30001-389102	TEN.SPRING 102	
35	PQ35436	SLIT DISK(S)	
36	PQ35437	SLIT DISK(T)	
37	PQM30018-69	SPACER	
38	PQM30003-38	BELT(CAPSTAN)	
39	Q03093-830	WASHER	
40	PRD45056	HEIGHT PLATE	
41	YFS2005B	SCREW	M2 x 5
42	SPST2606Z	SCREW	M2.6 x 6
43	PRD45082	TUG SPACER	
44	PQ46326-2	TOR.SPRING2	
45	PQM30017-24	SLIT WASHER	
46	SDSP2606Z	SCREW	M2.6 x 6
47	PQ46767-1-2	GUIDE CAP	
48	PQ11657-1-9	GUIDE RAIL	
49	LP40005-001A	SPACER	
50	SPST2608Z	SCREW	M2.6 x 8
51	PQ21684-1-3	CONTROL CAM	
52	PQ11658-1-15	CONTROL PLATE	
53	PQM30017-8	SLIT WASHER	
54	PQ35138-2	CONTROL BRACKET	
55	PQ46423	EARTH PLATE	
56	SPST2606Z	SCREW	M2.6 x 6
57	SPSF2608M	SCREW	M2.6 x 8
58	PQ35217-1-2	CTL BRACKET 2	
59	SPST2606Z	SCREW	M2.6 x 6
60	PQ21685-2-10	PINCH R.PLATE	
61	PQM30017-8	SLIT WASHER	
62	PQ35083-2	REEL BRACKET	
63	PQM30017-51	SLIT WASHER	
64	PQ35026-1-7	IDLER LEVER	

Symbol No.	Part No.	Part Name	Description
65	PQ11659-2	SLIDE PLATE	
66	PQ21686-1-3	T-UP LEVER	
68	PQ46345-1-2	T-UP HEAD	
69	SPST2606Z	SCREW	M2.6 x 6
70	PQM30003-39	BELT(LOADING)	
71	PQ21699-1-2	WORM BEARING	
72	PGZ02537-01-02	CAPSTAN MOTOR	
73	SPSG2608Z	SCREW	M2.6 x 8
74	PRD30024-98	TEN.SPRING 98	
75	PQM30017-25	SLIT WASHER	
76	PQ46354	CHANGE GEAR	
77	PQM30001-386	TEN. SPRING 386	
78	PQM30003-40	BELT(HOUSING)	
79	LP40008-001B	CASSETTE GEAR	
80	PQ35030-1-5	LID GUIDE	
81	LP20032-001A	L.E.D. PRISM	
82	PEHE0237	FULL ERASE HEAD	
83	SDST2610Z	SCREW	M2.6 x 10
84	PU61432-1-1	ROTARY ENCODER	
85	PQ46473-1-1	S-SW PIN	
86	PQ46474-1-2	S-SW HOLDER	
87	SPST2606Z	SCREW	M2.6 x 6
88	PRD20622A	MAIN DECK ASSEMBLY	
89	PQ46298A-5	TENSION BAND	
90	PQ46303B-8	TENSION ARM ASSEMBLY	
91	PQ46305B-03	M.BRAKE(S) ASSEMBLY	
92	PRD45108A	S.BRAKE(S) ASSEMBLY	
93	PQ46308A-05	M.BRAKE(T) ASSEMBLY	
94	PRD45112A	S.BRAKE(T) ASSEMBLY	
95	PRD31304-02	REEL DISK(S)	
96	PQM30018-74	SPACER	
97	PQ46552	SPRING	
98	PQ46553	REEL CAP	
99	PRD31304	REEL DISK(T)	
100	PQ46552	SPRING	
101	PQ46553	REEL CAP	
102	PQ46497B-2	PULLEY ASSEMBLY	
103	PQ46312B-11	IDLER ARM ASSEMBLY	
104	PRD45134A	CLUTCH UNIT(S)	
105	PQ46323A-1	CLUTCH UNIT(T)	
106	PQ46325D	GUIDE ARM ASSEMBLY	
107	PQ46327A-4	P.R.ARM ASSEMBLY	
108	PEHE0182	AUDIO CTL HEAD	
109	PQ35206-1-3	HEAD BASE	
110	PQ43687A	SCREW	M2.6 x 8
111	PQM30002-192	COMP.SPRING 192	
112	PQ46330C-10	P.BASE ASSEMBLY(S)	
113	PQ46331D	P.BASE ASSEMBLY(T)	
114	PQ46332B-3	L.ARM ASSEMBLY(S)	
115	PQ46337C	L.ARM ASSEMBLY(T)	
116	PQ46342B-10	LEVER ASSEMBLY	
117	PQ46344B	CHAN.LEVER ASSEMBLY	
118	PU60628-3-2	LOADING MOTOR	
119	PQ43546-1-2	MOTOR PULLEY	
120	SDSP3005Z	SCREW	M3 x 5
121	PRD20626-01-05	GUIDE BRACKET	
122	PQ46395B	WORM GEAR	
123	PRD45049A	C.B.ARM ASSEMBLY	
124	PQ46353A-2	CHANGE ARM	
125	PRD45179	SPACER	

SECTION 6
ELECTRICAL PARTS LIST

SAFETY PRECAUTION:
Parts identified by the ⚠ symbol are critical for safety. Replace only with specified parts numbers.
For maximum reliability and performance, all other replacement parts should be identical to those specified.

NOTE:
- Parts not denoted by parts numbers are not supplied by JVC.
- Abbreviations in this list are as follows:

RESISTORS
In the "Description" column:
All resistance values are in ohms (Ω).
k expresses kilo-ohm (1 000 ohms, kΩ).
M expresses mega-ohm (10^6 ohms, MΩ).

In the "Parts Name"column:
CAR.RESISTOR : Carbon Resistor
C.M.F.RESISTOR : Constant Metalized Film Resistor
COMP.RESISTOR : Composition Resistor
FUSI.RESISTOR : Fusible Resistor
M.F.RESISTOR : Metal Film Resistor
M.G.RESISTOR : Metal Graze Resistor
M.P.RESISTOR : Metal Plate Resistor
O.M.F.RESISTOR : Oxide Metalized Film Resistor
TRIM.RESISTOR : Trimerer Resistor
U.F.RESISTOR : Non-inflammable Resistor
VAL.RESISTOR : Valiable Resistor
W.W.RESISTOR : Wire Wound Resistor

CAPACITORS
In the "Description" column:
All capacitance values are in microfarad (μF) unless otherwise indicated.
p expresses picofarad (10^{-12} farad,pF).

In the "Parts Name" column:
CER.CAPACITOR : Ceramic Capacitor
E.CAPACITOR : Electrolytic Capacitor
FILM CAPACITOR : Film Capacitor
M.F.CAPACITOR : Metalized Film Capacitor
MICA CAPACITOR : Mica Capacitor
MPP CAPACITOR : Metalized PolyPropylene Capacitor
MPPS CAPACITOR : Metalized PolyPhenylene Sulfied film Capacitor
M.M.CAPACITOR : Metalized Mylar Capacitor
MYLAR CAPACITOR : Mylar Capacitor
N.P.CAPACITOR : Non-Poler electrolytic Capacitor
P.P.CAPACITOR : PolyPropylene Capacitor
PPS CAPACITOR : PolyPhenylene Sulfied film Capacitor
P.S.CAPACITOR : PolyStyrene Capacitor
TAN.CAPACITOR : Tantal Capacitor
TRIM.CAPACITOR : Trimer Capacitor
VAL.CAPACITOR : Valiable Capacitor

6.1 MAIN BOARD ASSEMBLY PARTS LIST [0][3]

SLK1112-00A [0][3]□□□□□□□

Symbol No.	Part No.	Part Name	Description
IC1	JCP0056	I.C.(M)	JVC
IC2	AN3969K	I.C.(M)	MATSUSHITA
IC3	BA6138	I.C.(M)	ROHM
IC101	BA7795LS	I.C.(M)	ROHM
IC301	UPD6459ACS-501	I.C.(M)	NEC
IC351	MM1117XS	I.C.(M)	MITSUMI
IC352	BA7623F-X	I.C.(M)	ROHM
IC401	BU2881BS	I.C.(M)	ROHM
IC451	BA7039	I.C.(M)	ROHM
IC601	HD6473927F-201	I.C.(M)	HITACHI
IC602	BR93LC56A	I.C.(M)	ROHM
IC603	S-80728AN-Z	I.C.(M)	SEIKO
IC604	TA7291S	I.C.(M)	TOSHIBA
IC607	M50253P	I.C.(M)	MITSUBISHI
IC608	TC4021BP	I.C.(M)	TOSHIBA
IC751	M37470M3-054SP	I.C.(M)	MITSUBISHI
Q1	DTC143TUA-X	TRANSISTOR	ROHM
Q2	DTC143TUA-X	TRANSISTOR	ROHM
Q3	DTC143TUA-X	TRANSISTOR	ROHM
Q51	2SD1450/ST/-T	TRANSISTOR	MATSUSHITA
Q52	2SC3311A/RS/-T	TRANSISTOR	MATSUSHITA
Q101	DTC114EUA-X	TRANSISTOR	ROHM
Q131	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q132	2SA933AS/RS/-T	TRANSISTOR	ROHM
Q133	2SA933AS/RS/-T	TRANSISTOR	ROHM
Q134	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q135	2SA933AS/RS/-T	TRANSISTOR	ROHM
Q201	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q202	2SA1576A/QRS/-X	TRANSISTOR	ROHM
Q203	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q221	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q222	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q223	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q241	DTC144EUA-X	TRANSISTOR	ROHM
Q242	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q243	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q261	DTC144EUA-X	TRANSISTOR	ROHM
Q262	DTC124EUA-X	TRANSISTOR	ROHM
Q263	DTC124EUA-X	TRANSISTOR	ROHM
Q264	DTC124EUA-X	TRANSISTOR	ROHM
Q281	DTC124EUA-X	TRANSISTOR	ROHM
Q282	DTA114EUA-X	TRANSISTOR	ROHM
Q301	2SA1576A/QRS/-X	TRANSISTOR	ROHM
Q302	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q351	2SA1576A/QRS/-X	TRANSISTOR	ROHM
Q352	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q401	DTC114EUA-X	TRANSISTOR	ROHM
Q601	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q602	LP40038-001A	TRANSISTOR	JVC
Q603	LP40038-001A	TRANSISTOR	JVC
Q604	DTC124EUA-X	TRANSISTOR	ROHM
Q605	DTC124EUA-X	TRANSISTOR	ROHM
Q606	DTC143EUA-X	TRANSISTOR	ROHM
Q801	2SK1976-F44	FET	ROHM
Q802	2SC3616/MLK/-T	TRANSISTOR	NEC
Q851	2SC1740S/RS/-T	TRANSISTOR	ROHM
Q881	2SC3616/MLK/-T	TRANSISTOR	NEC
Q882	2SD1266/QP/	TRANSISTOR	MATSUSHITA
Q883	2SC4081/QRS/-X	TRANSISTOR	ROHM
Q884	DTA114EUA-X	TRANSISTOR	ROHM
Q885	DTC143TUA-X	TRANSISTOR	ROHM
Q886	2SB1256-T	TRANSISTOR	ROHM
D101	RD6.2ES/B2/-T2	ZENER DIODE	NEC
D102	DAP202U-X	DIODE	ROHM
D103	DAP202U-X	DIODE	ROHM
D262	1SS133K-T2	DIODE	ROHM
D264	1SS133K-T2	DIODE	ROHM
D283	1SS133K-T2	DIODE	ROHM
D351	RD9.1EW-T1	ZENER DIODE	NEC
D352	RD9.1EW-T1	ZENER DIODE	NEC
D451	1SS133K-T2	DIODE	ROHM

Symbol No.	Part No.	Part Name	Description	
D601	11ES2-T2	DIODE	INTER	
D602	11ES2-T2	DIODE	INTER	
D603	RD9.1ES/B2/-T2	ZENER DIODE	NEC	
D604	1SS133K-T2	DIODE	ROHM	
D605	1SS133K-T2	DIODE	ROHM	
D606	1SS133K-T2	DIODE	ROHM	
D607	1SS133K-T2	DIODE	ROHM	
D608	1SS133K-T2	DIODE	ROHM	
D609	SIR-381SB3FX1M	LE.DIODE		
D610	RB721Q-40-X	DIODE	ROHM	
D611	QRE141J-0R0Y	CARBON RESISTOR	0	1/4W
D801	10E6-FA8	DIODE	INTER	
D802	10E6-FA8	DIODE	INTER	
D803	10E6-FA8	DIODE	INTER	
D804	10E6-FA8	DIODE	INTER	
D807	RD15ES/B3/-T2	ZENER DIODE	NEC	
D808	1SS133K-T2	DIODE	ROHM	
D852	RL2Z-LFB2	DIODE	ROHM	
D853	RL2Z-LFB2	DIODE	ROHM	
D854	RL2Z-LFB2	DIODE	ROHM	
D856	RK14-LFB2	DIODE	SANKEN	
D857	AU01Z-T2	DIODE	SANKEN	
D858	1SR153-400-T2	DIODE	ROHM	
D860	RD15ES/B1/-T2	ZENER DIODE	NEC	
D861	RD6.2ES/B3/-T2	ZENER DIODE	NEC	
D862	MTZ30A-T2	ZENER DIODE	ROHM	
D863	1SR153-400-T2	DIODE	ROHM	
D865	RL2Z-LFB2	DIODE	ROHM	
D866	RL2Z-LFB2	DIODE	ROHM	
D867	RL2Z-LFB2	DIODE	ROHM	
D882	RD5.1JS/B1/-T2	ZENER DIODE	NEC	
D883	1SS133K-T2	DIODE	ROHM	
D885	11ES2-T2	DIODE	INTER	
⚠PC801	PC817	I.C(PH COUPLER)		
R1	NRSA02J-511X	M.G.RESISTOR	510	1/10W
R2	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R3	NRSA02J-123X	M.G.RESISTOR	12k	1/10W
R4	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R5	NRVA02D-153X	C.M.F.RESISTOR	15k	1/10W
R6	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R7	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R8	NRSA02J-334X	M.G.RESISTOR	330k	1/10W
R11	NRVA02D-113X	C.M.F.RESISTOR	11k	1/10W
R12	NRSA02J-123X	M.G.RESISTOR	12k	1/10W
R13	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R14	NRSA02J-511X	M.G.RESISTOR	510	1/10W
R28	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R29	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R30	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R31	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R32	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R33	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R34	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R38	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R39	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R51	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R52	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R53	NRSA02J-331X	M.G.RESISTOR	330	1/10W
R61	NRSA02J-393X	M.G.RESISTOR	39k	1/10W
R62	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R63	NRSA02J-183X	M.G.RESISTOR	18k	1/10W
R64	NRSA02J-393X	M.G.RESISTOR	39k	1/10W
R65	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R66	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R72	NRSA02J-183X	M.G.RESISTOR	18k	1/10W
R73	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R81	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R82	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R83	NRSA02J-104X	M.G.RESISTOR	100k	1/10W

[MAIN]

Symbol No.	Part No.	Part Name	Description	
R84	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R102	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R103	NRSA02J-123X	M.G.RESISTOR	12k	1/10W
R104	NRSA02J-432X	M.G.RESISTOR	4.3k	1/10W
R105	NRSA02J-273X	M.G.RESISTOR	27k	1/10W
R106	NRSA02J-681X	M.G.RESISTOR	680	1/10W
R107	NRSA02J-682X	M.G.RESISTOR	6.8k	1/10W
R108	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R109	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R110	NRSA02J-273X	M.G.RESISTOR	27k	1/10W
R111	NRSA02J-181X	M.G.RESISTOR	180	1/10W
R112	NRSA02J-822X	M.G.RESISTOR	8.2k	1/10W
R113	NRSA02J-682X	M.G.RESISTOR	6.8k	1/10W
R114	NRSA02J-475X	M.G.RESISTOR	4.7M	1/10W
R115	QRE141J-221Y	CAR.RESISTOR	220	1/4W
R116	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R117	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R118	NRSA02J-274X	M.G.RESISTOR	270k	1/10W
R119	NRSA02J-391X	M.G.RESISTOR	390	1/10W
R120	QRE141J-103Y	CAR.RESISTOR	10k	1/4W
R131	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R132	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R133	NRSA02J-682X	M.G.RESISTOR	6.8k	1/10W
R134	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R135	NRSA02J-3R3X	M.G.RESISTOR	3.3	1/10W
R136	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R137	NRSA02J-183X	M.G.RESISTOR	18k	1/10W
R138	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R139	NRSA02J-273X	M.G.RESISTOR	27k	1/10W
R140	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R141	QRE141J-101Y	CAR.RESISTOR	100	1/4W
R142	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R143	QRE141J-151Y	CAR.RESISTOR	150	1/4W
R144	NRSA02J-3R3X	M.G.RESISTOR	3.3	1/10W
R145	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R146	NRSA02J-183X	M.G.RESISTOR	18k	1/10W
R147	QRE141J-0R0Y	CAR.RESISTOR	0	1/4W
R148	QRE141J-0R0Y	CAR.RESISTOR	0	1/4W
R149	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R201	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R202	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R203	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R204	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R205	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R206	NRSA02J-182X	M.G.RESISTOR	1.8k	1/10W
R207	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R208	NRSA02J-182X	M.G.RESISTOR	1.8k	1/10W
R209	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R221	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R224	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R225	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R226	NRSA02J-821X	M.G.RESISTOR	820	1/10W
R227	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R229	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R231	NRSA02J-301X	M.G.RESISTOR	300	1/10W
R241	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R243	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R244	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R245	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R246	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R247	NRSA02J-123X	M.G.RESISTOR	12k	1/10W
R248	NRSA02J-822X	M.G.RESISTOR	8.2k	1/10W
R249	NRSA02J-270X	M.G.RESISTOR	27	1/10W
R250	NRSA02J-331X	M.G.RESISTOR	330	1/10W
R251	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R252	NRSA02J-331X	M.G.RESISTOR	330	1/10W
R253	NRSA02J-122X	M.G.RESISTOR	1.2k	1/10W
R261	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R264	NRSA02J-183X	M.G.RESISTOR	18k	1/10W
R265	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R268	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R269	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R271	NRSA02J-393X	M.G.RESISTOR	39k	1/10W

Symbol No.	Part No.	Part Name	Description	
R282	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R283	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R284	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R287	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R301	NRSA02J-331X	M.G.RESISTOR	330	1/10W
R302	NRSA02J-680X	M.G.RESISTOR	68	1/10W
R303	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R305	NRSA02J-563X	M.G.RESISTOR	56k	1/10W
R306	NRSA02J-224X	M.G.RESISTOR	220k	1/10W
R307	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R308	NRSA02J-391X	M.G.RESISTOR	390	1/10W
R310	NRSA02J-154X	M.G.RESISTOR	150k	1/10W
R311	NRSA02J-822X	M.G.RESISTOR	8.2k	1/10W
R312	NRSA02J-682X	M.G.RESISTOR	6.8k	1/10W
R313	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R314	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R315	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R316	NRSA02J-105X	M.G.RESISTOR	1M	1/10W
R317	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R318	NRSA02J-153X	M.G.RESISTOR	15k	1/10W
R319	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R320	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R321	NRSA02J-122X	M.G.RESISTOR	1.2k	1/10W
R322	NRSA02J-681X	M.G.RESISTOR	680	1/10W
R351	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R352	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R353	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R355	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R357	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R359	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R363	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R364	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R366	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R367	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R368	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R369	NRSA02J-181X	M.G.RESISTOR	180	1/10W
R370	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R371	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R373	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R375	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R379	NRSA02J-750X	M.G.RESISTOR	75	1/10W
R380	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R381	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
R401	NRSA02J-561X	M.G.RESISTOR	560	1/10W
R402	NRSA02J-561X	M.G.RESISTOR	560	1/10W
R403	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R404	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R405	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R406	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R408	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R410	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R411	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R412	NRSA02J-562X	M.G.RESISTOR	5.6k	1/10W
R413	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R414	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R415	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R418	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R451	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R452	NRSA02J-392X	M.G.RESISTOR	3.9k	1/10W
R453	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R454	NRSA02J-123X	M.G.RESISTOR	12k	1/10W
R455	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R456	NRSA02J-154X	M.G.RESISTOR	150k	1/10W
R458	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R602	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R603	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R604	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R605	NRSA02J-105X	M.G.RESISTOR	1M	1/10W
R606	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R607	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R608	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R609	NRSA02J-221X	M.G.RESISTOR	220	1/10W

Symbol No.	Part No.	Part Name	Description	
R611	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R612	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R613	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R614	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R615	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R616	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R617	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R618	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R619	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R624	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R625	NRSA02J-332X	M.G.RESISTOR	3.3k	1/10W
R626	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R627	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R629	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R630	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R631	NRSA02J-681X	M.G.RESISTOR	680	1/10W
R632	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R635	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R638	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R639	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R641	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R643	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R644	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R645	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R646	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R647	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R648	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R649	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R650	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R651	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R652	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R654	NRSA02J-272X	M.G.RESISTOR	2.7k	1/10W
R655	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R658	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R659	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R661	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R662	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R663	NRSA02J-152X	M.G.RESISTOR	1.5k	1/10W
R664	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R667	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R668	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R669	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R671	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R672	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R673	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R674	NRSA02J-682X	M.G.RESISTOR	6.8k	1/10W
R675	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R676	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R682	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R684	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R685	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R686	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R687	QRE141J-750Y	CAR.RESISTOR	75	1/4W
R688	NRSA02J-221X	M.G.RESISTOR	220	1/10W
R692	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R693	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R696	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R699	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R700	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R701	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R702	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R703	NRSA02J-101X	M.G.RESISTOR	100	1/10W
R704	NRSA02J-473X	M.G.RESISTOR	47k	1/10W
R705	NRSA02J-333X	M.G.RESISTOR	33k	1/10W
R706	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R707	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R708	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R709	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R710	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R712	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R715	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R716	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R717	NRSA02J-102X	M.G.RESISTOR	1k	1/10W

Symbol No.	Part No.	Part Name	Description	
R718	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R719	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R720	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R721	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R722	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R723	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R724	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R725	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R726	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R727	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R751	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R752	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R753	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R754	NRSA02J-105X	M.G.RESISTOR	1M	1/10W
R755	NRSA02J-681X	M.G.RESISTOR	680	1/10W
R756	NRSA02J-104X	M.G.RESISTOR	100k	1/10W
R757	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R758	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
R760	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R761	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R762	NRSA02J-223X	M.G.RESISTOR	22k	1/10W
R763	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R764	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R765	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R776	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R777	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R778	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R779	NRSA02J-334X	M.G.RESISTOR	330k	1/10W
R804	QRE141J-683Y	CAR.RESISTOR	68k	1/4W
R805	QRE141J-683Y	CAR.RESISTOR	68k	1/4W
R808	QRT01DJ-R27X	M.F.RESISTOR	0.27	1W
R810	QRL017J-331	O.M.F.RESISTOR	330	1W
R811	QRE141J-152Y	CAR.RESISTOR	1.5k	1/4W
R814	QRE141J-561Y	CAR.RESISTOR	560	1/4W
R815	QRE141J-473Y	CAR.RESISTOR	47k	1/4W
R816	QRE141J-224Y	CAR.RESISTOR	220k	1/4W
R851	QRT01DJ-4R7X	M.F.RESISTOR	4.7	1W
R852	QRZ9005-470X	FUSI.RESISTOR	47	
R854	QRA14CF-4870Y	C.M.F.RESISTOR	487	1/4W
R855	QRE141J-471Y	CAR.RESISTOR	470	1/4W
R856	QRA14CF-3740Y	C.M.F.RESISTOR	374	1/4W
R857	QRE141J-122Y	CAR.RESISTOR	1.2k	1/4W
R881	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R882	QRE141J-473Y	CAR.RESISTOR	47k	1/4W
R883	NRSA02J-103X	M.G.RESISTOR	10k	1/10W
R884	QRE141J-471Y	CAR.RESISTOR	470	1/4W
R886	NRSA02J-471X	M.G.RESISTOR	470	1/10W
R888	NRSA02J-102X	M.G.RESISTOR	1k	1/10W
R891	QRE141J-102Y	CAR.RESISTOR	1k	1/4W
R896	NRSA02J-222X	M.G.RESISTOR	2.2k	1/10W
R897	NRSA02J-472X	M.G.RESISTOR	4.7k	1/10W
VR1	PGZ02461-104	V.RESISTOR	100k	A LEV(L)
VR2	PGZ02461-104	V.RESISTOR	100k	A LEV(R)
VR301	PGZ02461-333	V.RESISTOR	33k	fH
VR801	PGZ02461-471	V.RESISTOR	470	SWD 5V
C1	QEK61AM-336Z	E.CAPACITOR	33	10V
C2	NCB21EK-473X	CER.CAPACITOR	0.047	25V
C3	QEK61CM-106Z	E.CAPACITOR	10	16V
C4	QEK61AM-107Z	E.CAPACITOR	100	10V
C5	NCB21EK-153X	CER.CAPACITOR	0.015	25V
C6	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C7	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C8	QETC1AM-107Z	E.CAPACITOR	100	10V
C9	NCS21HJ-102X	CER.CAPACITOR	1000p	50V
C12	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C13	NCB21EK-473X	CER.CAPACITOR	0.047	25V
C14	QEK61HM-224Z	E.CAPACITOR	0.22	50V
C15	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C16	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C17	QEK61AM-107Z	E.CAPACITOR	100	10V

[MAIN]

Symbol No.	Part No.	Part Name	Description	
C18	NCB21EK-153X	CER.CAPACITOR	0.015	25V
C19	QEK61AM-107Z	E.CAPACITOR	100	10V
C20	QEK61CM-106Z	E.CAPACITOR	10	16V
C21	NCB21EK-473X	CER.CAPACITOR	0.047	25V
C22	QEK61AM-336Z	E.CAPACITOR	33	10V
C24	QEK61CM-476Z	E.CAPACITOR	47	16V
C25	QDX11EK-473Z	CER.CAPACITOR	0.047	25V
C27	QEK61CM-106Z	E.CAPACITOR	10	16V
C28	QEK61CM-106Z	E.CAPACITOR	10	16V
C29	QEK61AM-107Z	E.CAPACITOR	100	10V
C35	QEK61CM-106Z	E.CAPACITOR	10	16V
C36	QEK61CM-106Z	E.CAPACITOR	10	16V
C38	QEK61CM-476Z	E.CAPACITOR	47	16V
C39	QEK61CM-476Z	E.CAPACITOR	47	16V
C51	QETC1CM-476Z	E.CAPACITOR	47	16V
C52	QETC1CM-476Z	E.CAPACITOR	47	16V
C61	QEK61CM-106Z	E.CAPACITOR	10	16V
C62	QEK61CM-106Z	E.CAPACITOR	10	16V
C67	QEK61CM-476Z	E.CAPACITOR	47	16V
C68	QEK61CM-476Z	E.CAPACITOR	47	16V
C69	NCB21EK-393X	CER.CAPACITOR	0.039	25V
C72	QDX11EK-104Z	CER.CAPACITOR	0.1	25V
C73	NCB21EK-393X	CER.CAPACITOR	0.039	25V
C81	QEK61HM-475Z	E.CAPACITOR	4.7	50V
C82	QEK61HM-475	E.CAPACITOR	4.7	50V
C83	QEK61CM-476Z	E.CAPACITOR	47	16V
C84	QEK61CM-106Z	E.CAPACITOR	10	16V
C85	QEK61CM-106Z	E.CAPACITOR	10	16V
C86	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C87	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C101	NCS21HJ-222X	CER.CAPACITOR	2200p	50V
C102	QER61CM-476Z	E.CAPACITOR	47	16V
C104	QER61HM-105Z	E.CAPACITOR	1	50V
C105	QCC11EJ-682Z	CER.CAPACITOR	6800p	25V
C106	QDX11EJ-223Z	CER.CAPACITOR	0.022	25V
C107	QEK61HM-475Z	E.CAPACITOR	4.7	50V
C108	NCS21HJ-681X	CER.CAPACITOR	680p	50V
C109	NCB21EK-123X	CER.CAPACITOR	0.012	25V
C110	QEK61CM-226Z	E.CAPACITOR	22	16V
C111	QEK61HM-104Z	E.CAPACITOR	0.1	50V
C112	QEK61HM-475Z	E.CAPACITOR	4.7	50V
C113	QEK61HM-335Z	E.CAPACITOR	3.3	50V
C114	QDX11EJ-183Z	CER.CAPACITOR	0.018	25V
C115	QEK61CM-476Z	E.CAPACITOR	47	16V
C118	QEK61HM-105Z	E.CAPACITOR	1	50V
C131	NCS21HJ-331X	CER.CAPACITOR	330p	50V
C132	QFN31HJ-333Z	M.F.CAPACITOR	0.033	50V
C133	QEK61CM-107Z	E.CAPACITOR	100	16V
C134	NCB21HK-472X	CER.CAPACITOR	4700p	50V
C135	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C136	QFN31HJ-333Z	M.F.CAPACITOR	0.033	50V
C137	QEK61CM-106Z	E.CAPACITOR	10	16V
C138	NCB21HK-332X	CER.CAPACITOR	3300p	50V
C139	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C201	NCS21HJ-820X	CER.CAPACITOR	82p	50V
C202	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C203	NCS21HJ-200X	CER.CAPACITOR	20p	50V
C204	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C205	QEK60JM-476Z	E.CAPACITOR	47	6.3V
C206	QEK61HM-474Z	E.CAPACITOR	0.47	50V
C222	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C223	NDC21HJ-330X	CER.CAPACITOR	33p	50V
C224	NCB21HK-473X	CER.CAPACITOR	0.047	50V
C226	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C227	QER60JM-107Z	E.CAPACITOR	100	6.3V
C229	QETC1HM-106Z	E.CAPACITOR	10	50V
C241	QER60JM-107Z	E.CAPACITOR	100	6.3V
C242	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C243	NCS21HJ-390X	CER.CAPACITOR	39p	50V
C244	NCS21HJ-151X	CER.CAPACITOR	150p	50V
C245	NCS21HJ-151X	CER.CAPACITOR	150p	50V
C246	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C247	NCS21HJ-390X	CER.CAPACITOR	39p	50V

Symbol No.	Part No.	Part Name	Description	
C248	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C249	NCS21HJ-821X	CER.CAPACITOR	820p	50V
C250	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C261	QER60JM-107Z	E.CAPACITOR	100	6.3V
C262	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C264	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C265	NDC21HJ-330X	CER.CAPACITOR	33p	50V
C266	NCS21HJ-150X	CER.CAPACITOR	15p	50V
C267	NDC21HJ-101X	CER.CAPACITOR	100p	50V
C281	NDC21HJ-510X	CER.CAPACITOR	51p	50V
C282	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C283	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C284	NCS21HJ-121X	CER.CAPACITOR	120p	50V
C285	NCS21HJ-181X	CER.CAPACITOR	180p	50V
C301	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C302	NCS21HJ-271X	CER.CAPACITOR	270p	50V
C303	QDYB1CN-103Y	CER.CAPACITOR	0.01	16V
C304	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C305	QEK61HM-105Z	E.CAPACITOR	1	50V
C306	NCB21HK-472X	CER.CAPACITOR	4700p	50V
C307	NDC21HJ-101X	CER.CAPACITOR	100p	50V
C308	NCS21HJ-221X	CER.CAPACITOR	220p	50V
C309	QEK61HM-335Z	E.CAPACITOR	3.3	50V
C310	QEK61HM-105Z	E.CAPACITOR	1	50V
C311	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C312	QEK61CM-106Z	E.CAPACITOR	10	16V
C313	QDYB1CN-103Y	CER.CAPACITOR	0.01	16V
C314	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C315	NDC21HJ-330X	CER.CAPACITOR	33p	50V
C316	NDC21HJ-270X	CER.CAPACITOR	27p	50V
C317	NDC21HJ-270X	CER.CAPACITOR	27p	50V
C318	NDC21HJ-101X	CER.CAPACITOR	100p	50V
C319	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C320	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C321	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C351	QETC0JM-108Z	E.CAPACITOR	1000	6.3V
C352	QETC1HM-106Z	E.CAPACITOR	10	50V
C353	QETC1HM-106Z	E.CAPACITOR	10	50V
C355	QETN0JM-108Z	E.CAPACITOR	1000	6.3V
C356	QETN0JM-108Z	E.CAPACITOR	1000	6.3V
C357	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C359	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C360	QEK60JM-476Z	E.CAPACITOR	47	6.3V
C361	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C363	QEK60JM-107Z	E.CAPACITOR	100	6.3V
C364	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C365	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C367	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C371	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C401	NCB21HK-102X	CER.CAPACITOR	1000p	50V
C402	NCB21HK-102X	CER.CAPACITOR	1000p	50V
C403	NCB21EK-563X	CER.CAPACITOR	0.056	25V
C404	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C405	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C406	QEK61CM-106Z	E.CAPACITOR	10	16V
C407	QEK61CM-106Z	E.CAPACITOR	10	16V
C408	QEK60JM-107Z	E.CAPACITOR	100	6.3V
C409	NCB21HK-223X	CER.CAPACITOR	0.022	50V
C411	NCS21HJ-222X	CER.CAPACITOR	2200p	50V
C412	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C413	NCB11CK-105X	CER.CAPACITOR	1	16V
C414	NCB21HK-102X	CER.CAPACITOR	1000p	50V
C415	QEK61CM-106Z	E.CAPACITOR	10	16V
C416	NCB21HK-102X	CER.CAPACITOR	1000p	50V
C417	NCS21HJ-680X	CER.CAPACITOR	68p	50V
C451	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C452	QFV11HJ-104Z	T.F.CAPACITOR	0.1	50V
C453	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C454	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C455	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C456	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C458	QER61CM-106Z	E.CAPACITOR	10	16V

Symbol No.	Part No.	Part Name	Description	
C459	QFV11HJ-563Z	T.F.CAPACITOR	0.056	50V
C601	NDC21HJ-180X	CER.CAPACITOR	18p	50V
C602	NDC21HJ-180X	CER.CAPACITOR	18p	50V
C604	QER61AM-107Z	E.CAPACITOR	100	10V
C607	NCS21HJ-471X	CER.CAPACITOR	470p	50V
C610	QER61CM-106Z	E.CAPACITOR	10	16V
C611	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C613	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C614	NCB21EK-473X	CER.CAPACITOR	0.047	25V
C616	QEK61CM-106Z	E.CAPACITOR	10	16V
C617	NCB21HK-103X	CER.CAPACITOR	0.01	50V
C622	QER60JM-107Z	E.CAPACITOR	100	6.3V
C623	NCS21HJ-102X	CER.CAPACITOR	1000p	50V
C624	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C635	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C636	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C651	NCS21HJ-102X	CER.CAPACITOR	1000p	50V
C652	NCB21HK-473X	CER.CAPACITOR	0.047	50V
C653	NDC21HJ-100X	CER.CAPACITOR	10p	50V
C654	NDC21HJ-100X	CER.CAPACITOR	10p	50V
C656	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C751	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C752	NCB21HK-102X	CER.CAPACITOR	1000p	50V
C753	NCB21EK-104X	CER.CAPACITOR	0.1	25V
C754	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C755	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C756	NDC21HJ-220X	CER.CAPACITOR	22p	50V
C757	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C758	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C759	NCS21HJ-470X	CER.CAPACITOR	47p	50V
C760	QER61HM-335Z	E.CAPACITOR	3.3	50V
C761	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C762	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C763	NCS21HJ-101X	CER.CAPACITOR	100p	50V
C802	QFZ9037-473	FILM CAPACITOR	0.047	
C809	QCZ9016-472M	CER.CAPACITOR	4700p	
C810	QETM2DM-157	E.CAPACITOR	150	200V
C812	QETC1HM-105Z	E.CAPACITOR	1	50V
C814	QCZ0136-101Z	CER.CAPACITOR	100p	125V
C816	QFN31HJ-103Z	M.F.CAPACITOR	0.01	50V
C821	QFV11HJ-104Z	T.F. CAPACITOR	0.1	50V
C852	QEM91CM-827	E.CAPACITOR	820	16V
C853	QEM91AM-128	E.CAPACITOR	1200	10V
C854	QETC1HM-226Z	E.CAPACITOR	22	50V
C855	QEM91AM-107	E.CAPACITOR	100	10V
C856	QETC1AM-477Z	E.CAPACITOR	470	10V
C857	QETC1CM-477Z	E.CAPACITOR	470	16V
C858	QETC1HM-474Z	E.CAPACITOR	0.47	50V
C859	QFN31HJ-103Z	M.F.CAPACITOR	0.01	50V
C861	QEM91EM-337	E.CAPACITOR	330	25V
C881	QETC0JM-107Z	E.CAPACITOR	100	6.3V
C882	QETC1HM-106Z	E.CAPACITOR	10	50V
C883	QETC1CM-107Z	E.CAPACITOR	100	16V
L101	QQL25CJ-123Z	COIL	12mH	
L201	PELN0975-101JZ	COIL	100uH	
L202	QQL071J-101Y	COIL	100uH	
L203	QQL01BJ-220Z	COIL	22uH	
L221	PELN0975-101JZ	COIL	100uH	
L222	QQL01BJ-471Z	COIL	470uH	
L223	QQL01BJ-222Z	COIL	2.2mH	
L241	PELN0975-101JZ	COIL	100uH	
L242	QQL071J-470Y	COIL	47uH	
L243	QQL071J-330Y	COIL	33uH	
L244	QQL071J-101Y	COIL	100uH	
L261	QQL01BJ-102Z	COIL	1mH	
L262	QQL071J-121Y	COIL	120uH	
L263	QQL071J-221Y	COIL	220uH	
L264	QQL01BJ-680Z	COIL	68uH	
L281	QQL01BJ-390Z	COIL	39uH	
L282	QQL01BJ-100Z	COIL	10uH	
L283	QQL01BJ-390Z	COIL	39uH	
L284	QQL01BJ-181Z	COIL	180uH	

Symbol No.	Part No.	Part Name	Description	
L301	QQL01BJ-1R0Z	COIL	1uH	
L302	QQL01BJ-1R0Z	COIL	1uH	
L303	QQL20BJ-220	COIL	22uH	
L304	QQL01BJ-100Z	COIL	10uH	
L351	PELN0975-101JZ	COIL	100uH	
L352	PELN0975-101JZ	COIL	100uH	
L401	QQL071J-270Y	COIL	27uH	
L451	QQL071J-270Y	COIL	27uH	
L601	QQL114M-R22Z	COIL	0.22uH	
L602	QQL114K-100Z	COIL	10uH	
L603	QQL01BK-100Z	COIL	10uH	
L604	QQL03BJ-100Z	COIL	10uH	
L605	QQL03BJ-100Z	COIL	10uH	
L851	PELN0687	COIL	33uH	
L852	PELN0687	COIL	33uH	
L881	QQL01BK-101Z	COIL	100uH	
⚠CR801	PECA0962	CR FILTER		
X301	PEVB0442	CRYSTAL	3.58MHz	
X601	PEVB0422	CRYSTAL	32.768kHz	
CF601	PEVB0497	CERAMIC FILTER	10.0MHz	
CF751	PEVB0340	CERAMIC FILTER	4MHz	
CN101	PU60910-2	CONNECTOR	2PIN	
CN102	PU60910-7	CONNECTOR	7PIN	
CN103	PEMC1102-005	CONNECTOR	5PIN	
CN104	PU59555-5	CONNECTOR	5PIN	
CN203	PEMC1055-013	CONNECTOR	13PIN	
CN204	PEMC1055-014	CONNECTOR	14PIN	
CN205	PEMC0846-010	CONNECTOR	10PIN	
CN206	PEMC0846-010	CONNECTOR	10PIN	
CN402	PEMC1102-004	CONNECTOR	4PIN	
CN601	PU59555-107	CONNECTOR	7PIN	
CN602	PU61434-1-1	CONNECTOR	5PIN	
CN603	PU60910-2	CONNECTOR	2PIN	
CN604	PU59555-12	CONNECTOR	12PIN	
CN605	PEMC1102-008	CONNECTOR	8PIN	
CN801	PU60250-2	CONNECTOR	2PIN	
CN802	PU59555-3	CONNECTOR	3PIN	
TP201	SQMX001-001Z	TEST POINT	TP201-801	
B451	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
B702	NRSA02J-0R0X	M.G.RESISTOR	0	1/10W
⚠CP401	ICP-N15-T	ICP		
⚠CP601	ICP-N25-T	ICP		
⚠CP851	ICP-N20-T	ICP		
⚠CP852	ICP-N25-T	ICP		
⚠CP853	ICP-N20-T	ICP		
FC801	SSV2497-001Z	FUSE HOLDER	FC801,802	
JA1	PEMC1117	PIN JACK	LINE IN	
JA2	PU61149-6	PIN JACK	MONITOR OUT	
JA3	PEMC1116	PIN JACK	LINE OUT	
JA4	PEMC1118	S JACK	S OUT	
JA5	PEMC1118	S JACK	S IN	
K801	SSV0939-001TP	FERRITE BEADS		
⚠LF802	PU59707	LINE FILTER		

[MAIN]

Symbol No.	Part No.	Part Name	Description
PS601	PU61433	REEL SENSOR	TAKE UP
PS602	PU61433	REEL SENSOR	SUPPLY
SP1	PGZ01377-03	STYLE PIN	
SP2	PGZ01377-03	STYLE PIN	
SP3	PEME0947-01-02	SPACER	
T101	PELN0860	OSC.TRANSF.	
T102	PELN0861	OSC.TRANSF.	
⚠T801	PELN0426-04	SWITCH. TRANSF.	
TB801	SQMX002-001Z	TERMINAL	
SC1	SDSF3010Z	SCREW	M3x10
SC2	SDST3006Z	SCREW	M3x6
HS1	PRD49006	HEAT SINK	
BK1	PRD39014	TRANSF.BRACKET	
PD1	PRD30030-158	PAD	
PD2	PRD30030-151	PAD	
PD3	PRD30030-85	PAD	

6.2 FG AMP BOARD ASSEMBLY PARTS LIST [5][6]

SLK2072-00A [5][6]☐☐☐☐☐☐☐

Symbol No.	Part No.	Part Name	Description	
IC1	M5218AP	I.C.(M)	MITSUBISHI	
IC2	TC4013BP	I.C.(M)	TOSHIBA	
D1	1SS133K-T2	DIODE	ROHM	
R1	QRE141J-332Y	CAR.RESISTOR	3.3k	1/4W
R2	QRE141J-334Y	CAR.RESISTOR	330k	1/4W
R3	QRE141J-472Y	CAR.RESISTOR	4.7k	1/4W
R4	QRE141J-472Y	CAR.RESISTOR	4.7k	1/4W
R5	QRE141J-102Y	CAR.RESISTOR	1k	1/4W
R6	QRE141J-473Y	CAR.RESISTOR	47k	1/4W
R7	QRE141J-472Y	CAR.RESISTOR	4.7k	1/4W
R8	QRE141J-472Y	CAR.RESISTOR	4.7k	1/4W
R9	QRE141J-473Y	CAR.RESISTOR	47k	1/4W
R10	QRE141J-102Y	CAR.RESISTOR	1k	1/4W
R11	QRE141J-272Y	CAR.RESISTOR	2.7k	1/4W
C1	QEKC1CM-106Z	E.CAPACITOR	10	16V
C2	QCF31HZ-223Z	CER.CAPACITOR	0.022	50V
C3	QCF31HZ-103Z	CER.CAPACITOR	0.01	50V
C4	QFLC1HJ-823Z	MYLAR CAPACITOR	0.082	50V
C5	QCS31HJ-100Z	CER.CAPACITOR	10p	50V
C6	QCS31HJ-100Z	CER.CAPACITOR	10p	50V
C7	QCF31HZ-103Z	CER.CAPACITOR	0.01	50V
C8	QFLC1HJ-103Z	MYLAR CAPACITOR	0.01	50V
CN1	PU59973-12	CONNECTOR	12PIN	
CN2	PU59555-7	CONNECTOR	7PIN	